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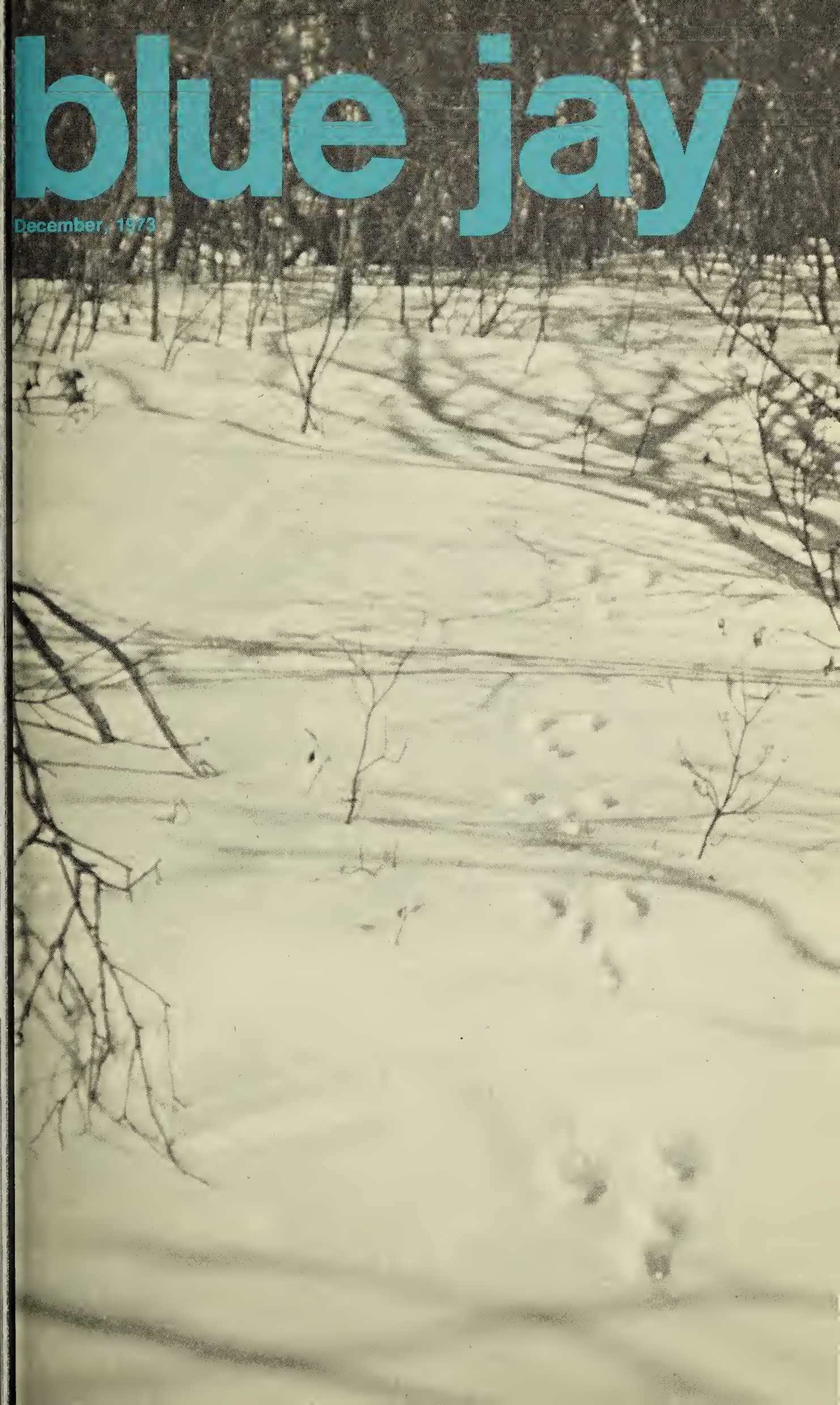

blue jay

A JOURNAL OF NATURAL HISTORY AND CONSERVATION FOR SASKATCHEWAN AND ADJACENT REGIONS

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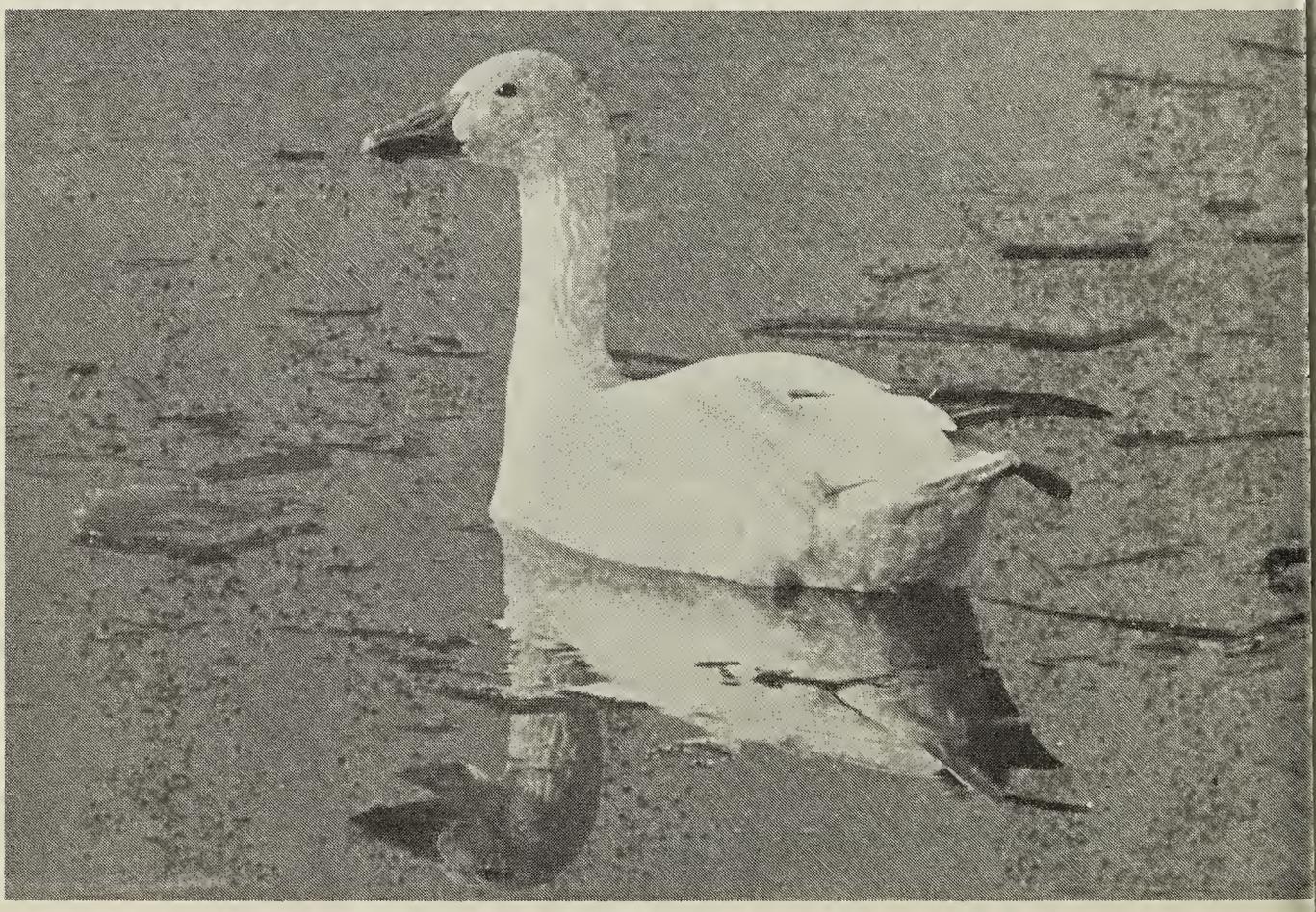
ERRATA — September, 1973, issue.

In "A study of seven warblers in Riding Mountain National Park" by W. J. Walley, t following error was made on page 158:

"All three habitats were studied in 1970 and 1971 . . ." should read "All three habit were studied in both years . . .", i.e., 1971 and 1972.



Lesser Snow Goose Fred Lahrm

HAROLD MOSSOP

by JOHN JACK*

Of such as he was, there be few on earth;
Of such as he is, there are few in heaven;
And life is all the sweeter that he lived,
And all he loved more sacred for his sake:
And Death is all the brighter that he died,
And Heaven is all the happier that he's there.

— Gerald Massey

"As long as the wild birds sing Harold will be remembered." These are the pening words of a letter of condolence received by Mrs. Ida Mossop following larold's passing on May 26, 1973.

The thought so beautifully expressed, emphasized the part of Harold Mossop hat we knew best, his love of nature, the outdoors and most of all, the birds. The reat motivation of Harold's life was his strong belief in a loving God. This faith ith an ability to communicate by written and spoken word made Harold the reat interpreter he was of the wonders of our natural environment.

Introduced to birding at an early age by his father, he had no formal education n ornithology, but became known and respected for his contributions to the cience by professionals and lay people across the continent. In turn, his son David has become a professional ornithologist and also the author of a column, mplete with sketches, which remind one so much of the "Chickadee Notes" we njoyed for many years and which Harold carried on from one of his mentors, the te A. G. Lawrence.

In the Manitoba Naturalists' Society he occupied many positions — President, ecretary, Treasurer and Auditor. But Harold will be remembered best for his nterpretations of birds. His impact on young people in Saturday morning bird alks in Assiniboine Park and his lectures and demonstrations in classroom and eld led some to careers in biology. Thus his influence lives beyond his own life me.

Just over a year ago, Life Membership in the Manitoba Naturalists' Society was nferred on Harold. The inscription on a plaque presented at the same time eads, "Manitoba Naturalists Society Award for exceptional merit to Harold Mossop for his outstanding contribution to ornithology in Manitoba, April, 972."

Unfortunately, Harold did not have a span of years that might have been ex-ected. An accomplished vocalist, organist and preacher, his church received a ll share of his time; he was an honest, hardworking businessman, and he had a appy home life. Head of a family which shared love, understanding, work and creation, his faith and guidance enabled them to come through the long illness nd final parting with sorrow in their hears but happy and confident in the future.

Harold's death brings a loss to the community and to the causes to which he evoted his life. In his time he served well and led others to carry on his good orks. Thus the influence of a man who believed and worked for his beliefs must ndure.

---

29 Elm Park Road,
innipeg, Manitoba,
2M 0W3

THE CONSERVATION PROGRAM

Of Parks Canada

by THE HONOURABLE JEAN CHRETIEN*

It's a great pleasure for me to accept your invitation to attend this 25th Annual Conference of the Saskatchewan Natural History Society, and to speak briefly about a subject in which we have a mutual interest and common goals.

The Conservation Program of my department, recently renamed "Parks Canada", has an important role to play in recognizing and conserving those historic and natural aspects of Saskatchewan which are of special importance to all Canadians.

One of the special areas in Saskatchewan is Prince Albert National Park, established in 1927. Since then, it has been a major attraction both for visitors and for residents of this province. Recently, I must admit, we have had difficulties in maintaining and developing this park as I would have liked. The establishment of 11 new national parks since 1968 has put a severe strain on our total budget. Also we have been reluctant to take action before the results of last year's public hearings on the provisional master plan for Prince Albert National Park are analysed. I hope we will soon be in a position to call public hearings on a provisional master plan for Waskesiu. With the help of the opinions of all interested groups and individuals, I am confident that an exciting long-range plan can be evolved. I am fully aware that the implementation of such a plan will require both imagination and funds.

As I have already mentioned, Parks Canada is involved in the preservation of our human heritage, as well as natural heritage. At Fort Wal developments are under way wh will make it one of the major Natio Historic Parks in western Canada. T provincial government is cooperat in various aspects of this endeav and we hope that important und takings including access roads an visitors' reception centre can be rea by 1975, Fort Walsh's centennial. T summer we commemorated t Cypress Hills Massacre which w closely related to the founding of North West Mounted Police wh centennial we are saluting in 19 Our restoration of the famous F well's Trading Post was opened t year as well. Every article from na and salt to whisky is there just as it w in 1873.

At historic sites, our aim is histo authenticity. Only in this way can t true sense of our past be preserved f us and for our children.

In our National Parks, our aim natural preservation. Only in this w can we ensure that examples of each Canada's natural regions are allow to evolve unhindered by man's a tivities. Many of these regions are n represented in the system. Some a not.

The most important natural regi not represented in Canada's Natio Parks system is the shortgrass prai of southwestern Saskatchewa Another is the badlands area to t east. Linked together by a scenic par way they would make a spectacul National Park.

Of course, this suggestion is not ne The Saskatchewan Natural Histo Society passed its first resolution favour of this park in 195 Negotiations with various provinci

*Minister of Indian and Northern Affairs,
Centennial Tower,
400 Laurier Ave. West,
Ottawa, Ontario T1A 0H4
Delivered at S.N.H.S. Annual Meeting, Oct. 13, 1973.

ereford cattle grazing in proposed grassland park, Saskatchewan. G. W. Seib

overnments have taken place oradically for over 8 years.

The fact that negotiations have not en successful does not diminish the portance of the grasslands area to l Canadians. It is truly unique. The ronghorn antelope, black-tailed rret and prairie dogs are still there. nd there is no true prairie National ark in North America. For those of us ho are caught up in city life — and at includes most Canadians — the pen ranges of the grasslands and the ark eroded structures of the badlands e both exiciting and refreshing.

A new National Park in this or any ther part of Canada must not be tablished to the disadvantage of cal residents, whose way of life epends on their traditional use of the nd. There would be no expropriation f ranchers for a grasslands National ark near Val Marie. One possibility that 2 core areas — one in the rasslands and one in the badlands — e set aside immediately by the trans- r of provincial crown lands only. At he same time a desirable final bound- ry would be agreed upon. There ould be no compulsion of ranch wners within this ultimate boundary move. The right of an owner to pass is land on to his heirs would be un- isturbed. If and when a rancher chose sell his property, the government would be prepared to buy it at a fair market price and to offer its services to assist the rancher to relocate.

Another point of contention in negotiations over the years has been the stipulation that the mineral rights must be transferred by the province to the federal government. On this point, there can be no compromise. Land set aside in National Parks is for conservation not exploitation of its natural resources. There would, of course, be provision in the agreement that if the land was no longer needed for National Parks purposes, the land and subsurface rights would revert to the province.

I am willing to discuss this proposal with the provincial government at any time. I am hopeful that this flexible approach to the grazing problem will be the turning point in our negotiations and that a grasslands National Park will soon become a reality.

There is also another special area of Saskatchewan which is of great concern to your organization, namely, the Churchill River.

As you know, I was asked in 1971 by the Saskatchewan government to initiate a study to assess the national park potential of the Churchill River area. As a consequence, a joint federal-provincial study was

organized to undertake this task.

A preliminary report was recently prepared by my department and sent to the province for their comments. I am awaiting Mr. Bowerman's reaction and I am hopeful that he will be as enthusiastic as I am about the prospects.

As a result of this report, we can now affirm that the segment of the Churchill River from Ile-à-la-Crosse to Island Falls encompasses several characteristics of national interest. It includes two distinctive natural regions, the Southern boreal plains and plateaux and the Central boreal uplands. Rare and endangered fauna, such as bald eagles, osprey and woodland caribou can still be found there. In addition, this section possesses great historical significance for it was used from prehistoric times to our days as a transportation, fur trade and exploration route.

If the province is agreeable, I wo like to proceed with the additio studies required to develop a propo for the inclusion of a segment of Churchill River in the National Pa system. I look forward to discussi with the province in the near futur

I have mentioned some aspects Saskatchewan which are of special portance to Parks Canada.

In conclusion, I would like to press my thanks to the Saskatchew Natural History Society for the opp tunity to speak and my congratulati for your perseverance and dedicat to the cause of conservation. The s port of citizens' organizations such your own is essential if governme responsible for parks are to fulfill expectations and needs of Canadia

Energy, Mines and Resources, Canada
Halkett (Sandy) Lake, Prince Albert National Park, Saskatchewan.

RASSLAND PARK RESOLUTION

The following resolution was passed the 25th Annual Meeting of the skatchewan Natural History on Oc- ber 13, 1973:

HEREAS the Government of Canada and the Province of Saskatchewan have in the past expressed a desire to establish a grasslands national park in southwestern Saskatchewan;

d WHEREAS agricultural programs and other developments are resulting in the elimination of natural areas of all kinds in the southern half of Saskatchewan;

d WHEREAS there is in southwestern Saskatchewan a unique area of shortgrass prairie and badlands with associated flora and fauna, many species of which are rare and some are endangered;

d WHEREAS there are so very few tracts of public land not under lease to which the public may have access;

d WHEREAS our country's national parks are intended to preserve all kinds of natural habitat for posterity on behalf of all Canadians;

d WHEREAS an area of prairie is not now included in the national parks system;

d WHEREAS the area proposed for a grasslands national park largely consists of agricultural soils of the lowest rating and not recommended for cultivation;

d WHEREAS most of the parcels in this area are public lands;

d WHEREAS the population density has decreased and is one of the lowest of any in the settled part of Saskatchewan;

d WHEREAS mineral values seem to be marginal;

d WHEREAS it has been demonstrated in other countries that desert, semi-desert and savannah types of national parks are popular attractions, and that the area proposed for a grasslands national park in Saskatchewan has potential for several unique outdoor activities;

d WHEREAS many residents of Saskatchewan are unaware of the uniqueness of the badland prairie in the southwest;

rasslands, Saskatchewan. G. W. Seib

and WHEREAS the conditions proposed by the Province of Saskatchewan in 1972 for a national park or for a provincial park would effectively result in no discernable change from the present uses of the area;

and WHEREAS it is evident that provincial and regional parks which are established primarily for recreational purposes and which operate on a multi-use basis cannot provide adequate protection for a fragile semidesert habitat or guarantee the preservation of viable populations of characteristic species of flora and fauna;

and WHEREAS Saskatchewan has an obligation to Canada and the world to see that areas of significance in natural and human heritage are preserved for all time;

BE IT THEREFORE RESOLVED

that the Saskatchewan Natural History Society urge the governments of Canada and Saskatchewan to re-open negotiations with the sole objective of creating a national prairie grassland park;

AND be it further resolved that the Saskatchewan Natural History Society remind the Saskatchewan Government of its national and international obligation toward the preservation of some portion of this now unique short grass prairie biome;

AND be it further resolved that the Government of Canada be urged in consideration of a grasslands park to protect the interests of ranchers by insuring the present lessees use of the land for ranching purposes as long as they so wish. In addition provisions for generous compensation should be insured to those ranchers who relinquish their lease at the time a park is formed;

AND be it further resolved that the Saskatchewan Natural History Society urge that an advisory council for a national grasslands park be formed which would assure regional, provincial and federal representation.

* * * * * * * *

Members wishing to do their part in making a grassland park a reality should write, phone or visit their MLA's to let their views be known.

DEPARTMENTS OF THE ENVIRONMENT

Part II

by GEOFFREY GALLOWAY*

The Acts setting up the Departments of the Environment provide their offspring with the legislative tools to do the job, and to a large extent determine how effective they can become. They have all started out with a handicap. The federal Environment Canada, for example, is constrained by what the Hon. Jack Davis, Minister of the Environment, calls ". . . the extensive provincial jurisdiction in environmental and renewable resource areas". In addition to this, other departments within each government are likely to react defensively if they feel their authority threatened and very few of them can claim that their activities have no effect on the environment. For these reasons the Acts should be judged by what is left out of them as well as what they contain.

As far as tangible powers are concerned, Environment Canada has to make do with those not already wielded by the provinces. They cover coastal fisheries, migratory birds, meteorology, technical surveys, Federal Government facilities and international matters. All of these were already administered by the Federal Government before the Department was created. Some others which are listed — forests, water, wildlife — are effectively controlled by the provinces, as are inland fisheries on the prairies. New responsibilities of the Department, which make its formation more than a mere change of name, sound more hopeful than practical. For example, "the protection and enhancement of the quality of the natural environment . . ."; and, ". . . promote and encourage the institution of practices and conduct leading to the better protection of environment quality . . ." In simple terms this bo down to acting as an information ce tre and giving advice on resour management. One item, howeve deserves mention, even if it is no m than a foot in the door. This is t adoption of standards of environme tal quality, for example in t regulation of pollution. Once lim are established, as they routinely ar for instance, by the field of food ar drugs, their enforcement becomes simple matter of monitoring and leg process. At present, only gross abuse the environment stands a chance triggering government action. Clear standards are not something whi should be decided at the local level; be effective, they need to be unifor across the nation, and it is appropria that the federal Department shou shoulder the responsibility. Whether will be allowed to, however, is anoth question.

The provincial Departments hav on paper at least, much more pow than the federal one. Alberta leads th way, equipped with an Act which giv it a say in almost all decisions affecti the environment. It covers, for exan ple, "laws in force in Alberta th relate to or directly or indirectly affe the ecology of the environment natural resources." There are diffe ences, however, between what th Minister "may" do, what he "shall" and what the government may do his advice. He may purchase lan promote and carry out researc projects, make plans for emergenci and issue stop orders when the Act contravened. On the other hand, "shall" co-ordinate governmen policies, acquire information an prepare long-range plans. Finally, his advice the Lieutenant-Governo

*1168 Spadina Crescent, Saskatoon, Sask.

esting water quality. Sask. Photo/Arts Services

n-Council may impose curbs on other Ministers, declare a state of mergency, establish restricted levelopment areas, authorize ex-ropriation and compensation and rescribe penalties.

Despite the wide scope of the Act, owever, the areas directly run by the Department are limited to water anagement, control of air pollution nd agricultural chemicals. The emainder are controlled by other lepartments but it is clearly intended hat they should work in harmony with he Department of the Environment. ts Conservation and Utilization Com-mittee, made up of employees from ther departments, reports directly to council of Deputy Ministers. This is wise provision, because clearly the Department's biggest task lies in reconciling its aims with those of other ranches of government. In the con-lict of conservation versus develop-ment it is likely to find itself pitted against formidable interests and needs o be in a position where its opinion carries weight. This it can only earn by being better informed than its op-ponents and armed with alternative plans to those it is rejecting. The Act gives it the tools, but it will have to tep daintily to use them without an-agonizing the rest of the government.

The Saskatchewan Act is considered ast because it is to some extent modelled on Alberta's, although more limited in scope. Passed in May, 1972, it makes the Department heir to the former Water Resources Commission, complete with its staff and premises. The Water Resources Management Act, passed at the same time, contains most of its direct responsibilities, including control of all matters concerning water works, sewage works and pollution control. Apart from these, the Minister may, as in Alberta, co-ordinate the policies of government agencies, undertake research, acquire information and issue stop orders. The Lieutenant-Governor-in-Council may make regulations controlling waste disposal, agricultural chemicals, gravel removal and noise levels. Notably absent, however, is any mention of acquiring land, curbing powers of other Ministers, dealing with emergencies, setting up restricted development areas, making long-term plans or economic factors such as compensation payments and cost/benefit studies. Obviously other departments have been a lot less co-operative than their counterparts in Alberta in giving up any of their power. The Interagency Co-ordinating Committee, made up of employees from other departments, reports only to the Deputy Minister of the Environment, instead of to a council of Deputy Ministers. This suggests that co-ordination does not enjoy a very high priority with the government. In short, the Department is poorly equipped for its task compared with Alberta's and will depend heavily on the pressure of public opinion to be effective.

How can public opinion be brought to bear on governments? All three Departments of the Environment have some form of advisory council which is accessible to the public, although there is a wide variation in the influence they have. The federal Act of May, 1971, contains no reference to the Environmental Advisory Council, whose membership was not announced until nearly a year later. Described as "outside the government" in a brochure from Information Canada, it reports directly to the Minister. For this reason its influence on the Federal Government will depend, in turn, on

the effectiveness of Environment Canada.

The Saskatchewan Act states "The Minister may, with the approval of the Lieutenant-Governor-in-Council, appoint a council to be known as the Environmental Advisory Council. . ." It is tempting to ask how effective the public's watchdog can be when it is appointed by the people it is watching. So far the Council's problems seem to be a limited budget and even more limited communication with the Minister. It would be premature, however, to pass judgement on the Council so early in its life.

Alberta has paid by far the most attention to its council, known as the Environment Conservation Authority. Established by its own Act in 1970, it was already in existence when the Department was formed. Of the three, it is the only council to have its functions defined by statute. As originally set up, it consisted of three salaried members appointed by, and reporting to, the Lieutenant-Governor-in-Council. It had powers to inquire into any matter pertaining to environmental conservation, hire experts and appoint public advisory committees. All of these powers were retained when the Department was formed in 1971 but all have since been made subject to the approval of the Minister by a 1972 amendment. Recent events suggest that this approval is not easy to come by and the loss of freedom has already caused the resignation of one of the members. The amendment also raised the number of members to four possibly in anticipation of an increased turnover. Despite all this, the Authority has packed a surprising record of activity into its short life and is emerging as an effective spokesman for the public. During 1972 its Public Advisory Committee passed 22 resolutions from four different study groups. This makes it all the more unfortunate that its powers should have been curtailed but it is heartening to see that public pressure can have some effect, even if in this case the effect was a negative one.

What should we expect of an advisory council? Perhaps the pattern already exists in the field of economics. The Hon. Jack Davis described one of his Department's functions as making sure projects are well-designed from the environmental point of view, in the same way that other departments appraise them from the financial point of view. This invites the observation that their financial soundness is also under the scrutiny of the Auditor-General. Perhaps what is needed now is an environmental counterpart of the Auditor-General.

Editor's Note: Manitoba information had not arrived by the time this was written in June.

Mobile Air Quality Laboratory. Sask. Dept. Environment

A Brief Concerning The MEADOW LAKE PROVINCIAL PARK Provisional Master Plan*

(The following are excerpts from the Brief and its Supplement. It consists of the points given in the summary, in most cases with some elaboration from the body of the Brief or Supplement. It is less than one-third the length of both combined.)

In summary, our Society makes these points:

1. Holding public hearings on development proposals is good for soliciting ideas and comments, and for informing and publicizing.

2. Revise the Parks Act, basing it on a forward-thinking recreation and preservation policy and including stipulations to publicize any proposals for changes in zoning or leasing of all forms.

From the day of its foundation 25 years ago, the Saskatchewan Natural History Society has been concerned with the intelligent use of Saskatchewan's land and resources. The 3,100 members of the provincial and associated local societies fully endorse the stated aims of the Parks Act: that "the provincial parks . . . shall be maintained and used as public parks and pleasure grounds for the benefit, advantage, education and enjoyment of the people of Saskatchewan". At the same time we deplore the fact that in 1973, nearly 70 years since Saskatchewan's establishment as a province, we will have no clearly formulated provincial parks policy . . .

The Parks Act (1965) is a limited document. It is not concerned with long-range plans, it does not indicate the proportion of provincial land and water area that should be reserved for provincial parks, and it speaks only in the broadest terms of park uses (Section II), making no clear distinction, for instance, between wilderness areas, natural areas, and parks devoted primarily to family recreation . . .

The Cabinet can change boundaries, lease parcels of land "deemed advisable in the public interest" (Section 20, c), or zone any portion of a park "to regulate or confine the various uses of land therein" (Section 20, e). Twice since the Meadow Lake Park was established in 1959 the boundaries have been altered and the total area reduced . . .

Since it is becoming increasingly difficult to set aside land for parks, immediate consideration must be given to the establishment of more major parks and reserves and sanctuaries in every ecological zone of the province from the prairie grasslands through the parklands, the transition zone, the coniferous forest and the rugged Precambrian areas of the north . . . Preservation in perpetuity of representative faunal, floral and geological areas must be a chief concern. Smaller (regional) parks concerned primarily with local recreation are already being developed throughout the province and can be expanded more readily than large parks at a later date . . .

Finally, a revised Parks Act must take into consideration the rapidly changing public attitudes to parks, and to wilderness areas in particular. Increasingly, people want to escape the crowds of cities; they want to return to nature, to solitude, to fresh streams and rivers, to simple outdoor living. Canoes and sailboats are replacing motor boats; thousands of people are hiking, biking, horse riding, tenting, cross-country skiing, taking pictures and observing wildlife. The time will come, if it has not come already, when great stretches of wilderness and unspoiled rivers like the Waterhen and the Churchill will be considered the greatest asset of our province . . .

3. Define the boundaries of in-

*Submitted by the Saskatchewan Natural History Society, February 2, 1973, Saskatoon, Saskatchewan.

dividual parks by legislation, not by order-in-council.

4. Establish a Parks and Preservation Authority for all provincial parks, wilderness and conservation areas.

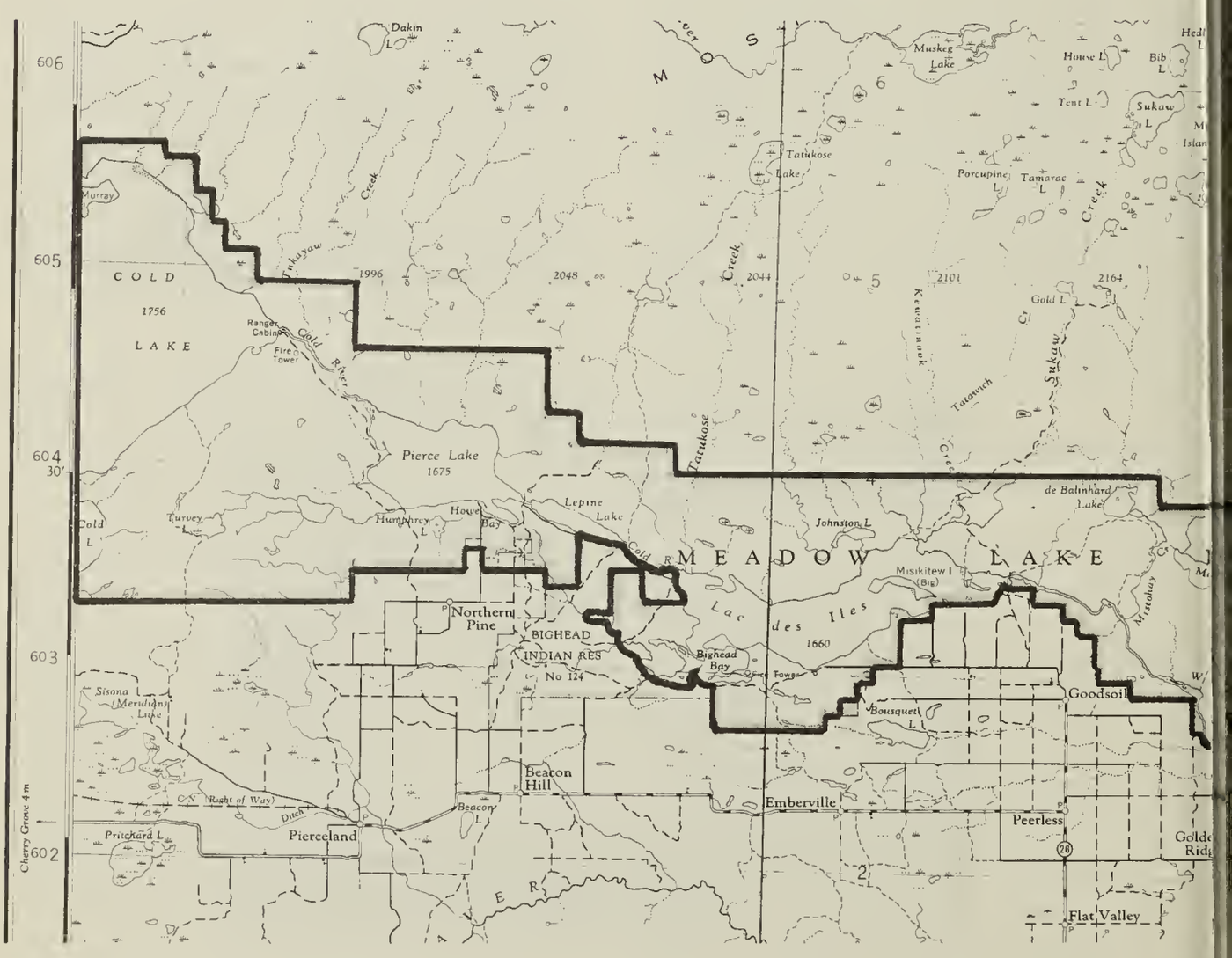
To gain broad support for the provincial parks program and to ensure careful consideration of parks policy, a permanent *Parks and Conservation Authority* should be established with representation drawn from various segments of the provincial community outside the government services, with powers under legislation, and operating in a manner analogous to Wascana Centre Authority . . .

5. Because Saskatchewan is behind many other provinces, states and like-size countries in the preservation of the fast disappearing natural scene, stress careful planning and managing of the areas we do have.

The state of New York, one of the most densely populated regions of North America, has 18.8% of its area in parks and preserves, compared with the 0.71% we have allotted in Saskatchewan . . . The (British Columbia) Ecological Reserves Act of 197 provides for the establishing of 10 ecological areas (similar to wilderness areas) by the end of 1975. 27 ha already been established by the end o 1971. Within the past few years, Britis Columbia has also cooperated with th Federal government to create two ne National Parks; furthermore it now ha reserved 10,120 square miles in provin cial parks, compared with the 1,80 square miles set aside in Saskatchewa . . .

6. We reject outright the notion o multiple use within the park, and th blanket classification, "Resort", for s large a park.

First, we believe that multiple use i inconsistent with the stated aims of Th Parks Act (cited earlier). The Society has sought legal advice and has received this response: "In my opinion, th Lieutenant Governor-in-Council i nowhere authorized by this legislatio



Meadow Lake Provincial Park, Saskatchewan.

o permit or prescribe any use, 'multiple' r otherwise, that is not in keeping with ne plain meaning to be ascribed to the mitations implied when the same is ead altogether: i.e. 'Provincial parks hall be maintained and used as public arks and pleasure grounds for the enefit, advantage, education and enoyment of the people of Saskathewan'."

Second, we feel that the peculiar hape of the park (60 miles long, yet veraging only seven miles wide) would nake the results of logging particularly bvious to visitors and destroy the atural beauty of the park . . .

Third, in keeping with the convicions expressed earlier about the value f unspoiled areas and the likelihood of ncreased park usage, and recognizing he fact that complete restoration of orests in this relatively dry area equires between 80 and 120 years, we annot see the wisdom in commercial xploitation of any portion of the park whether it be for lumbering, grazing, gravel removal or the extraction of minerals . . .

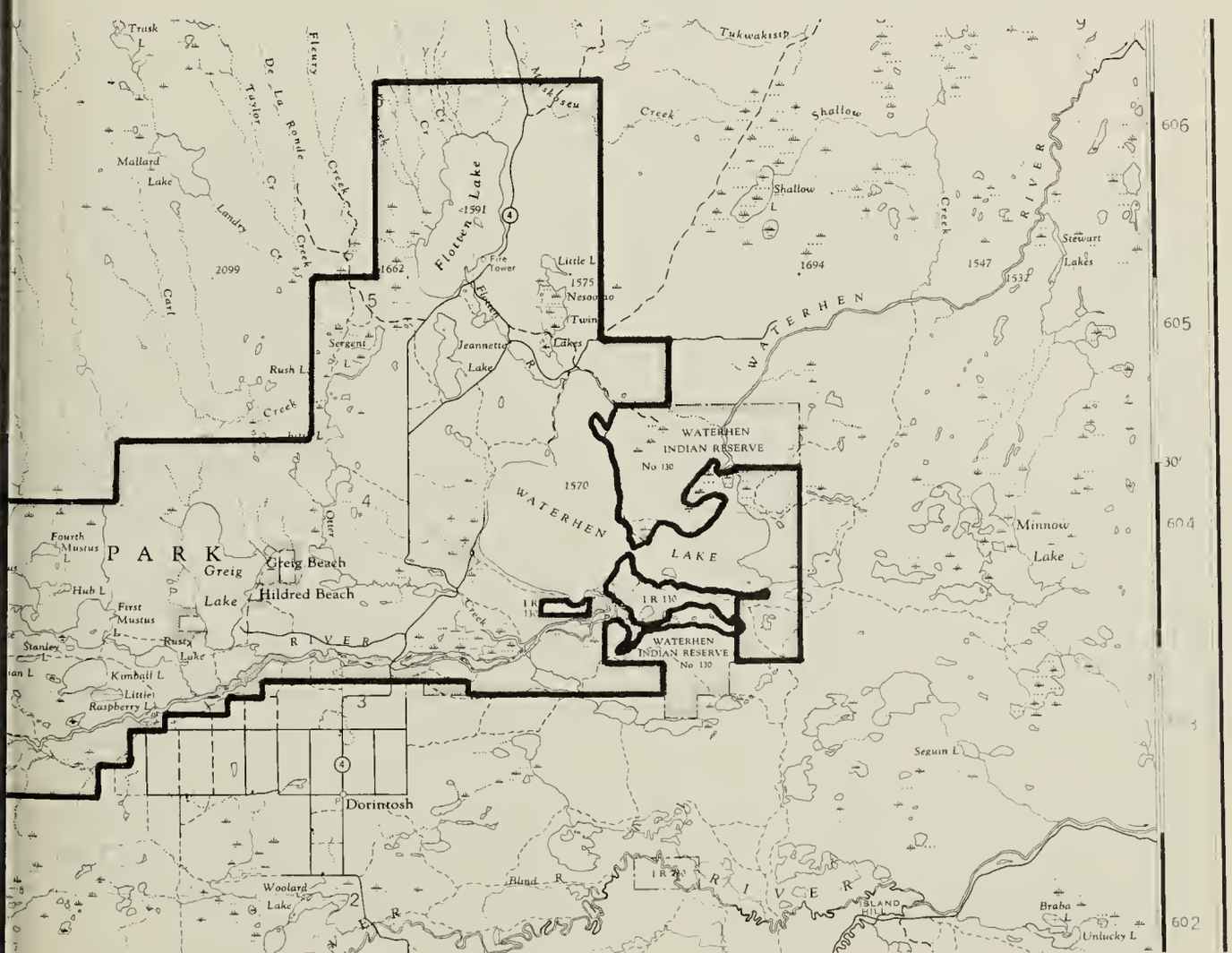
The Society . . . urges that all areas designated for "integrated use" be converted to recreation, natural and primitive zones (Supplement).

7. We support the zoning principle, but propose four modifications in its application to Meadow Lake Provincial Park.

—three extensions of the primitive area, as we have defined,
—an increase to 15 percent the water area with motor boat restrictions, as described . . .

Two further categories:

—*Protected Zone or Area.* Such places in parks as archeological and colonial bird nesting sites and other similarly sensitive areas require special protection to ensure their continuity and preservation. The Park's heron and Western Grebe colonies should be in protected zones . . . (Supplement).
—*Interim Zoning.* In places . . . there



has been an attempt to apply overall principles while at the same time maintaining a status quo; and the two turn out to be fundamentally incompatible. Evidently there is need for a special zoning with an interim or transitional function . . . The purpose of such zoning would be to serve notice on all that the previous use is to change, but may continue for a predetermined period — until expiry of a lease, or for a given number of years or up to some other logical termination . . . (Supplement)

The campsite area at the east end of Kimball would become a part of the Interim Zones . . . The rapid expansion of campsites at Kimball this past summer was over-hasty, particularly in view of the fact that public hearings were pending. (Supplement)

The Plan suggests that the Waterhen-Beaver-Churchill chain affords an opportunity for an extended canoe route. The Province should capitalize on this potential . . . A first rate, wilderness canoe trip will yield one of the cheapest and best promotions the Park could receive. Though outside the Park, the lower reaches of the Waterhen and Beaver Rivers will also have to be preserved as wilderness if the potential suggested in the Plan is to be realized . . . It is therefore recommended that all of Cold River and Waterhen River (not the connecting lakes) within the Park be classified Natural waters and that 1000 feet of land on both banks be continuously zones as Primitive . . . (Supplement)

8. Relocate a portion of the proposed east-west arterial road so as to keep noise and through traffic away from a major woodland lake. . . . we believe that a 60 mph arterial highway traversing the park is completely inconsistent with the stated aims of the Park Plan: "that park roads will, to the extent possible, facilitate an enjoyable experience while driving," and "advantage will be taken of the interpretive and scenic values." . . .

The projected use by 430,000 people in 1980 would result in a population density in the park equivalent to that being experienced at Yellowstone National Park, where 2,000,000 visito now crowd into an area six times large as Meadow Lake Provincial Par Yellowstone's problems are well know . . .

9. As off-road use of motorbikes is i compatible with enjoyment of the Pa by the majority, provide a cross-countr area outside the Park if one is needed

10. Ban snowmobiles from the Par *Conservation News* . . . reports that "th Bureau of Sports Fisheries and Wildli has *closed* experimental trails f snowmobiles and other off-roa vehicles in three National Wildlif Refuges. Observations of activities the trail sites . . . indicated tha snowmobiles *do disturb* wildlife an harm wildlife habitat." . . .

11. We believe, (a) more rental ac commodation than the Plan suggest will be needed, (b) domestic servic provisions, especially for youn families, may be inadequate, and (c) as principle, accommodation, service etc., should be built by the par authority and operated under con cessions by local people.

We commend your proposal to limi the expansion of cottage subdivision We believe that people who want t build cottages should be encouraged t buy lots at nearby resorts outside th park. Parks are primarily intended fo all the people of the province, not just few cottage owners fortunate enough t be able to take advantage of the splen did facilities provided by a provinci park.

12. Ensure that provisions for out door education are adequate.

We are particularly pleased with th decision to reserve an area for an out door education facility at Rusty Lake As soon as the Park Nature Centre i completed, priority should be given t the erection of the outdoor educatio centre, accommodating not less than 5 students and teachers at a time . . .

13. Make preserving flora and faun — to ensure there is a park wortl visiting a century from now — a corner stone of park policy.

Suffice to say, no time should be los in making inventories of species an

special habitats. Every effort must be bent towards protecting rare birds and plants in the park; the heronry in the Mustus Lake area is a good case in point . . . Mature and over-mature hardwood and softwood stands form the natural habitat for some of the less common birds and plants and, at times, for some mammals . . .

Knowledge of the resource is essential before plans are finalized — if for no other reason than to avoid the sort of hideous mistake made in Pike Lake Provincial Park. There a parking lot and playground were built on a bog, one of the few places in central Saskatchewan where wild orchids grew . . .

14. Seek the views of the hiking fraternity on the merits of a hiking trail the length of the Park.

Your recognition of the need for hiking trails is valid. While a total of 30.5 miles is recommended for the present, with several more proposed for a later date, we believe that many hikers would welcome a hiking trail extending from the Alberta border to the northeast end of the park. It could well become one of the most popular attractions of the park . . .

15. Do not use beaches for warehousing private or rental boats.

* * * * *

We applaud, in particular, the following recommendations contained in the Master Plan: . . .

—the proposals to purchase land along the south boundary of the park in order to preserve park landscape and to discontinue cultivation of crops within the park.

—the establishment of a Park Nature Centre and six self-guided nature trails . . .

—plans for a more rigid and consistent building code with a unifying architectural theme.

—the consideration being given to employing Indians . . .

If the Park is less than visitors and tourists expect of a park today, money spent on promotion will be wasted. A good park, well planned, managed and preserved is its own advertisement. The Meadow Lake Park area contains some of the most beautiful lakes and scenery in Canada. This Master Plan is well along in seeing that it can be maintained. Take the Plan the last mile to ensure that all visitors, now and in the future, will carry away pleasant recollections.

Trees backlighted in snow. R. E. Gehlert

OBSERVATIONS ON POWER TOBOGGANS

by FRANK C. SWITZER*

The winter of 1969 was really the last winter when power toboggans caused little damage in the two provincial parks I am familiar with — Good Spirit and Duck Mountain, Saskatchewan. The following comments are my personal observations and others that I have read or heard about.

The most important factor to me, personally, is the assault on my ears when, after having walked into a remote area specifically to escape from mechanized noise, one of these cursed machines roars into the beautiful silence.

The most noticeable damage done by power toboggans is to trees and shrubs. It seems necessary to drive these machines off the designated trails and engage in a grand slalom through the trees and underbrush. I grant that most of the plants are probably hidden from the operator by the snow and it is, therefore, more difficult to make him aware of the destruction he causes. One machine operator appeared to be trying to see how much his machine could bulldoze: there were large numbers of saplings up to 3/4 inches broken off and bent in the track. In cold weather the bark on trees, especially the White Poplar, becomes very brittle and a slight knock at the right angle will cause large pieces to shatter off like glass. This leaves an unsightly scar but, more important, it provides a site for plant disease and insect pests to gain an easy foothold. Once disease and insects are established, there is a reservoir of infection that could be spread to healthy plants, if conditions are favourable.

Less noticeable but probably more serious is the compaction of the snow by power toboggans. It is well known that, if left undisturbed, snow is a very good insulator. In the thin layer nex to the ground, the crystal structure i altered in such a way that it is prac tically unnecessary for small rodent to dig through it; instead, all they hav to do is push or "swim" their wa through it. Studies have been carrie out to determine the effects of natura and man-made compaction of snov and by far the worst effects are man made. The vibration of the powe toboggan and its weight pack the snov tightly to the ground, thereb destroying much of its insulatin quality.

In a coniferous forest there is littl in the way of flora and fauna on th forest floor. The acid condition of th soil, the lack of sun and, even mor importantly, "snow shadow" are con tributing factors. Snow shadow i related to the large percentage o falling snow that is kept off the groun by the branches of the trees, thereb leaving a relatively thin cover of snov on the forest floor. There is then mor likelihood that the ground will freez at a temperature little different fron that of the air. What little vegetatio there is on the floor of a coniferou forest will suffer still further from lac of insulation where snow toboggan are plentiful.

Thus far we have only commente on plants and only briefly mentione animals. The populations of rodents mainly mice, voles and shrews, tha remain active throughout the winte have three basic needs — food freedom to move to find that food an warmth. When an area is criss-crosse by power toboggans, barriers to th movement of small rodents under th snow are created. To move in search o food or in a population expansion these small animals must negotiate th power toboggan trails. The compacte snow under these trails appears to b too difficult to dig through as see

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from the many holes in the sides of the trench. It appears that when a small animal comes against the packed snow barrier, it tries to tunnel up and over the track. I once found the frozen carcass of a vole in the trench; it would appear that it came out the side wall of a 2-foot trench and fell to the bottom where it wandered around until it froze to death. The vole had not had sufficient time to dig its way out or to climb high enough to find soft snow to dig through. These hard-packed paths are also handy for coyotes and foxes which probably explains why one does not find more frozen rodents.

Some larger mammals suffer as well when power toboggan operators intrude on their habitat. I have seen where these vehicles have been driven into deer yards and, in one case, it was quite evident that the operator of the vehicle had one thing in mind: to chase a deer to exhaustion. A predator-eaten carcass at the end of the trail seemed to be proof that he was successful. Upon retracing the predator's tracks, it was found that he had entered the deer yard along the power toboggan trail.

It is upsetting to see the unsporting behaviour of power toboggan operators outside park areas where, all to often, one witnesses a machine being driven after a rabbit, fox or coyote. One wonders if this same behaviour does not go on inside the park as well.

Another area where power toboggans may do unexpected damage is on lakes and ponds. There may not be much hazard in this area yet, as the number of power toboggans on lakes is small. Studies in Wisconsin, I believe, have indicated that excessive packing of snow and the scratching of the ice surface by power toboggan tracks reduces the amount of sunlight transmitted through the ice. This, of course, inhibits photosynthesis and could be a factor in the reduction of oxygen causing winter-kill of fish. Since both of the lakes (Good Spirit and Madge) in these parks are relatively shallow, this could become a problem if power toboggans were restricted to the lakes and many vehicles were encouraged.

More and more we seem to be making the provincial parks into "fun and games" centers. This I believe to be completely wrong. These parks should be returned to a more natural state. This means that mechanized travel within a park should be kept to a minimum. Quiet, leisurely travel should be the order. This means non-motorized travel such as horseback, bicycle, canoe, row boat, foot-trails, etc. The only vehicles in a park would be the ones in use by park staff and those at the campgrounds. There is no need for "fun and games" activities inside what little park land this province has. There is a lot of land outside park property for this kind of thing. Parks are preserves. Let's keep them that way.

Adult and young Snow Geese. Fred Lahrman

NATIVE CONIFERS

Of Saskatchewan

by VERNON L. HARMS*

The conifers are important trees and shrubs in the Saskatchewan flora, including ecological dominants of the Cypress Hills and northern coniferous forests. The conifers are mostly evergreens and belong to the general group of plants known as Gymnosperms which have naked seeds usually borne in cones, in contrast to the Angiosperms (or flowering plants) which have their seeds enclosed in ovaries and are borne in flowers. The conifers are often referred to by the group name "Evergreens" although a few species, such as our Tamarack and the Bald Cypress of southern United States, have deciduous leaves while, on the other hand, many flowering plants, such as most heath shrubs, have evergreen leaves.

This paper is intended as a simple guide to the identification of the native conifers of Saskatchewan and their description. There are eight native species in the province, including six trees — Tamarack, Jack Pine, Lodgepole Pine, Black Spruce, White Spruce and Balsam Fir — and two shrubs — Creeping Juniper and Ground Juniper. Of course, any of the tree species may be shrub-sized in young stages. The illustrated identification key of Figure 1 should allow the reader to correctly determine the species of any unknown native conifer. It should be pointed out that various non-native species of conifers are often distributed by nurseries and planted in parks, yards and farmsteads, and the key does not cover these. Some of the more common introduced conifers planted in the province are Colorado Blue Spruce, Scotch Pine, Mugho Pine and various varieties of Juniper and Arbor Vitae (Cedar). Leafy twigs and cones of the eight native conifer species are illustrated in the drawings of Figure 2.

1. Tamarack (Larch), *Larix laricina* (Du Roi) K. Koch. Tamarack is a tree of wet boggy habitats throughout the northern coniferous forest in Saskatchewan. The trees have straight tapering trunks and a narrow open crown allowing most branches to be visible. The upper branches are distinctly upcurved. The trees may reach a height of 70 feet with a diameter of 20 inches, but are usually 30-60 feet high and only 5-10 inches in diameter. The bark of younger trees is thin, light brown and smooth; the bark of older trees is orange-red, deeply furrowed and loosely scaly. The needles are 1/2 to 1 inch long and are mostly borne in crowded clusters of 12-20 from small knobby spurs on the twigs. Young shoots and leaders show a spiral arrangement of the needles. The needles are a yellow-green colour in summer, but turn a light yellow in autumn and then drop off. It is the only deciduous-leaved conifer species in Saskatchewan; all other conifers in the province are evergreen. The cones are round and small, about 1/2 inch long.

2. Jack Pine, *Pinus banksiana* Lamb. Jack Pine is a common tree in the northern forest of Saskatchewan, often forming extensive stands on drier, well-drained sites. The trees are tall, 50 to 75 feet high and 8-15 inches in diameter with relatively narrow crowns. The bark is mottled, dark brownish-gray, with small loose scales. The evergreen needles are 1-2 1/2 inches long, two to a bundle, and

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IDENTIFICATION KEY TO THE NATIVE CONIFERS OF SASKATCHEWAN

LEAVES ARE NEEDLES OR SCALES; SEEDS BORNE NAKED IN CONES

- TREES
  - NEEDLES CLUSTERED ON SHORT KNOBBY SPURS
    
    NEEDLES LOST IN WINTER; CONES SMALL, ROUND
    1. TAMARACK (LARCH) **Larix laricina**
  - NEEDLES IN BUNDLES OF 2
    
    - CONES DIRECTED FORWARD; CONE SCALES WITHOUT PRICKLES
      

      2. JACK PINE **Pinus banksiana**
    - CONES DIRECTED OUTWARD OR BACKWARD; CONE SCALES WITH PRICKLE
      

      3. LODGEPOLE PINE **Pinus contorta**
  - NEEDLES SPIRALLY ARRANGED
    
    - TWIGS ROUGHENED BY LEAF BASES; NEEDLES 4-SIDED, POINTED
      
      - TWIGS FINELY HAIRY; CONES SPHERICAL, LESS THAN 1 INCH LONG
        

        4 BLACK SPRUCE **Picea mariana**
      - TWIGS NOT HAIRY; CONES ELONGATED, OVER 1 INCH LONG
        

        5. WHITE SPRUCE **Picea glauca**
    - TWIGS SMOOTH; NEEDLES FLAT, BLUNT
      
      6. BALSAM FIR **Abies balsamea**
- SHRUBS
  - NEEDLES OR SCALES OPPOSITE OR WHORLED; CONES BERRY-LIKE
    
    - MOST LEAVES SCALE-LIKE, OPPOSITE, ABOUT 1/16 INCH LONG
      
      7. CREEPING JUNIPER **Juniperus horizontalis**
    - LEAVES AWL-SHAPED, IN WHORLS OF 3, 1/5-1/2 INCH LONG
      
      8. GROUND JUNIPER **Juniperus communis**

Fig.

light green in colour. The cones are hard, oval, directed strongly forward, and often remain on the trees for several years. The cone scales are naked, lacking the prominent prickle of the closely related and similar Lodgepole Pine.

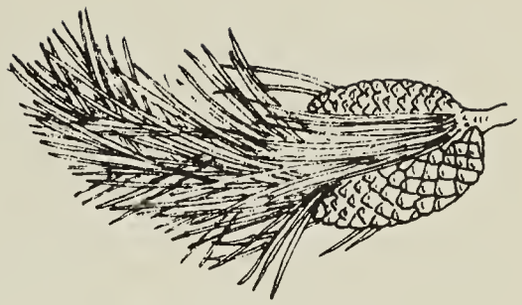
3. Lodgepole Pine, *Pinus contorta* Dougl. var. *latifolia* Engelm. Trees of Lodgepole Pine usually grow in dense stands and then are tall and slender with narrow crowns. The trees are 40-75 feet high and 8-15 inches in diameter. The branches generally curve upward. The bark is mottled, dark gray or brownish, with a light covering of small loose scales. The evergreen needles are 1-2 1/2 inches long, two to a bundle, and often have a yellowish-green tinge. The cones are hard, oval, directed outward or backward, and often hang unopened on the trees for several years. The cone scales bear a small curved prickle on their back near the tip. Lodgepole Pine is limited to the Cypress Hills in Saskatchewan.

4. Black Spruce, *Picea mariana* (Mill.) B.S.P. Black Spruce is a tree characteristically found in bogs, muskegs, and cold wet flats throughout the northern forest area in Saskatchewan. It is also common on uplands northward on the Precambrian Shield. The trees may reach 70 feet in height and 10 inches in diameter but most are shorter, only 10-30 feet high and 3-6 inches in diameter. Most branches are short, sparse, and horizontal to drooping at the ends. The bark is thin with gray to blackish scales. The twigs are slender, often blackish, and are covered with a fuzz of short reddish brown hairs. The needles are stiff, 4-angled, short-stalked, ashy blue-green and about 1/4-1/2 inch long. The seed cones are almost spherical, gray-brown to purplish, small, 1/2-1 inch, curved downward and usually in clusters that often remain on the tree for several years.

5. White Spruce, *Picea glauca* (Moench) Voss. White Spruce is a common tree of the Cypress Hills and northern coniferous forest in Saskatchewan. When growing in thick stands, the trees are narrowly triangular with a straight trunk. The topmost branches curve upward, but the lower branches droop downward. The trees may reach 100 to 130 feet in height in favorable sites, but more commonly are 40-70 feet high and 6-20 inches in diameter. The bark is covered with thin, grayish to brownish scales, and is reddish-brown between and beneath the scales. The twigs are roughened by prominent leaf bases and are hairless. The leaves are 4-sided, sharp-pointed, short-stalked and 1/2-1 inch long. The seed cones are brown, symmetrical, oblong, 1-2 inches long and hang downward.

6. Balsam Fir, *Abies Balsamea* (L.) Mill. Trees of Balsam Fir occur in moist woods intermixed with white spruce, poplar, aspen, and other species, throughout the northern coniferous forest in Saskatchewan. Despite its prominence in the northern coniferous forest of eastern Canada, nowhere in this province is it an abundant species. The trees have straight trunks and narrow, symmetrical crowns with the branches appearing in distinct whorls. The trees may reach up to 80 feet in height and 20 inches in diameter, but most are considerably smaller. The bark of young trees is gray, thin and smooth with conspicuous resin blisters; that of older trees is reddish and scaly. The twigs are relatively smooth with round leaf scars. The needles are flat, blunt, 1/2-1 inch long and are wide-spreading, forming flattened sprays on lower branches. The needles of spruces and firs can be distinguished quite easily by the fact that a fir needle will not roll between the fingers whereas a spruce needle will. The seed cones

1. TAMARACK (LARCH)

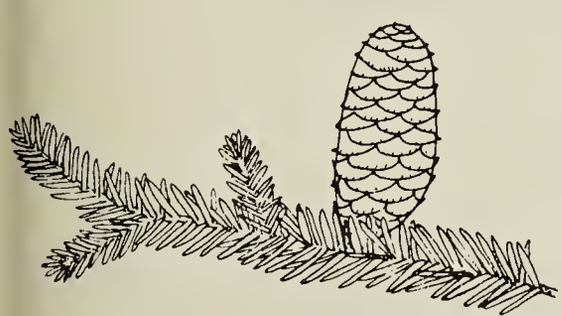


2. JACK PINE

3. LODGEPOLE PINE

4. BLACK SPRUCE

5. WHITE SPRUCE



6. BALSAM FIR

7. CREEPING JUNIPER

8. GROUND JUNIPER

Fig. 2. Leafy twigs and cones of the eight native conifer species in Saskatchewan.

of Balsam Fir are 2-4 inches long purplish, and erect.

7. Creeping Juniper (Creeping Savin), *Juniperus horizontalis* Moench. Creeping Juniper is a prostrate or trailing evergreen shrub with long horizontal, often rooting, stems giving rise to short erect twigs, 2-6 inches high. The leaves are opposite, mostly scale-like, 1/16 inch long, blunt and bluish green. On young plants and leaders, however, the leaves may be awl-shaped, sharp-pointed and about 1/4 inch long. The seed cones are blue with a whitish bloom, round, berry-like and about 1/4 inch in diameter. Creeping Juniper is found on dry river banks and sandy knolls, particularly in the southern third of the province, although it is occasional in the northern coniferous forest as well.
8. Ground Juniper (Common Juniper, Dwarf Juniper), *Juniperus communis* L. Ground Juniper is a low, spreading evergreen shrub reaching only about 2 feet in height and often forming large clumps. The bark is thin, dark reddish-brown to gray, rough and scaly. The leaves are awl-shaped, 1/4-1/2 inch long, less than 1/16 inch wide, stiff, sharply pointed, whitish and grooved below, shiny yellow-green above and whorled in threes. The seed cones are dark blue covered with a whitish bloom, round, berry-like, hard and about 1/4 inch in diameter. Ground Juniper is found throughout Saskatchewan on riverbanks and exposed hills both in the prairies and in the northern woods, although it is somewhat rare in the latter area.

NODDING TRILLIUMS

In Eastern Saskatchewan

by BERNARD De VRIES*

En route to the Saskatchewan Natural History Society field-meeting at Hudson Bay, Saskatchewan, my wife and I tried to relocate the known locations of Nodding Trillium (*Trillium cernuum* L., fig. 1) in eastern Saskatchewan. Previous field trips in 1971 and 1972 were unsuccessful; however, *Trillium cernuum* L. variety *cernuum* and variety *macranthum* Eames and Wieg. were discovered at four separate and additional locations in eastern Saskatchewan between June 14 and 17, 1973.

Rather small, but well established populations of Nodding Trillium occur in aspen (*Populus tremuloides*) woods, mainly in association with Speckled Alder (*Alnus incana*), and on one occasion in a damp SpeckledAlder - Ostrich Fern (*Matteucia struthiopteris*) woods.

The Saskatchewan localities are listed below with the number of each voucher specimen in the Fort Qu'Appelle (Sask.) Herbarium:

*Fort Qu'Appelle Herbarium,
Fort Qu'Appelle, Saskatchewan.

ɔdding Trillium (*Trillium cernuum* var. *macranthum*)

ɔecimen No.	Location and Date
977 & 978	2 km (1.25 miles) southeast of junction of Highway 57 and Batka Road and 1 km (0.67 miles) west of the Manitoba boundary, Duck Mountain Provincial Park, Saskatchewan. June 14, 1973.
979 & 980	21 km (13 miles) northeast of Hudson Bay, Saskatchewan, along Highway 109 and 29 km (18 miles) west of the Manitoba border. June 15, 1973.
981	82 km (51 miles) northeast of Hudson Bay, Saskatchewan, along Highway 109 and 26 km (16 miles) west of the Manitoba boundary. June 16, 1973.
982	13 km (8 miles) south of Hudson Bay, Saskatchewan, along the Little Swan River Road and 26 km (16 miles) west of the Manitoba boundary. June 17, 1973.

This species ranges through temperate eastern America from southern Manitoba east to Quebec and Newfoundland, south to Nova Scotia and the New England States to upper Georgia. The variety *macranthum* ranges through much of the above range, but extends farther west to Pennsylvania, Ohio, Indiana and north to Wisconsin into Ontario and Manitoba. Both the typical species and the variety occur in eastern Saskatchewan as scattered populations.

Previous known Saskatchewan collections are as follows: D. Arnott, Runnymede, 86; B. Boivin and T. Mosquin, Hudson Bay, 37 km (23 miles) north, *10857*, July 11, 1955; N. A. Skoglund, Duck Mountain Provincial Park near Madge Lake, *560*, July 21, 1971. Voucher material was

examined by the author and is deposited in the Fraser Herbarium, University of Saskatchewan, Saskatoon.

Upon examining voucher material, the author suggests that the collection of *Trillium cernuum* var. *macranthum* by Boivin and Mosquin is possibly the record in which Scoggan (1959) notes it as reported from the Mackenzie. This collection is titularly labeled: "Plantes de la Saskatchewan, Canada, District de Mackenzie". Also the collection of *Trillium cernuum* by Arnott is in all probability the first record for Saskatchewan and referred to by A. J. Breitung in his 1957 *Annotated Catalogue of the Vascular Flora of Saskatchewan* (Harms, 1971, personal communication). This species has since been revised to the variety *macranthum*. However, on the basis of comparison with his own material and measurements given for corolla, anther and peduncle in the literature, the author prefers to retain it as variety *cernuum*.[2,4]

Although differences between variety *cernuum* and variety *macranthum* are apparent for corolla, they are less defined for anther and peduncle and more material is needed if distinct determination is to be obtained.

Measurements for corolla, anther and peduncle taken on 6978 and 6980 compare favourably on the average with those given in literature and examined voucher material of *Trillium cernuum* for corolla and anther, i.e., corolla 15-25 mm long, 5-9 mm wide, anthers 2.5-4.5 mm long. Measurements taken on 6978 for peduncle were somewhat larger (45 mm vs. 40 mm).

The collection 6981 indicates a northward extension of 45 km (28 miles) from the previous locality at Bois franc. The entire 1973 collection of *Trillium cernuum* including the variety *macranthum* could indicate a more widespread occurrence of this eastern deciduous forest species than formerly believed in eastern Saskatchewan, where it reaches its western and northern limits in the boreal-grassland transition zone.

A second species, Woodland Anemone (*Anemone quinquefolia* L. var. *interior* Fern.), was collected in an Aspen wood, 3 km (2 miles) west of the Manitoba boundary along Highway 3, 6983, June 15, 1973. The previous known Saskatchewan collection is in aspen woods at Somme by Ronald Hooper, undated. A voucher specimen is deposited with the Experimental Station, Canada Department of Agriculture, Swift Current, Saskatchewan. This collection is believed to be a first for Saskatchewan.[3]

The Woodland Anemone ranges through temperate eastern America, from central Manitoba to southern James Bay, south to Michigan, Iowa, Illinois, and Kentucky.[4] It reaches its western limit in eastern Saskatchewan where it occurs sporadically in Aspen-grassland margins.

A third species, Purple Clematis, (*Clematis verticillaris* DC.) was collected by S. Riome and S. J. Street in an Aspen wood. The specimen was brought to the author's attention and donated to the Fort Qu'Appelle Herbarium by Mrs. Mary Skinner. The location is as follows: 88 km (55 miles) north of Hudson Bay and 27 km (17 miles) west of the Manitoba boundary along Highway 109, 6984, June 16, 1973.

This species ranges from Ontario east to Quebec and south through the New England States to Maryland, west to Ohio, Michigan and Wisconsin. It has been reported from Manitoba by Jackson *et al.* and Lowe (in Scoggan, 1957), but no actual specimens have been seen. The Western Clematis, variety *columbiana* (Nutt.) A. Gray, occurs in the extreme southwest corner of Saskatchewan and through much of Alberta and British Columbia.

The unusually wide disjunction between Ontario and southwestern Saskatchewan warrants consideration. The occurrences of the variety *verticillaris* in eastern Canada and the United States are contiguous.

Although the collection of Purple Clematis was rather scanty, the author hypothesizes the specimen to be the

variety *verticillaris* on basis of comparison with voucher material and measurements given by Boivin for sepals, i.e. 2.0 - 4.5 mm long. This would indicate a westward extension and first record of this variety in Saskatchewan. Additional collections both in Manitoba and Saskatchewan are needed to substantiate the hypothesis. The area of transition between the varieties *verticillaris* and *columbiana* has yet to be located.

[1]BOIVIN, B. 1968-1969. *Flora of the Prairie Provinces, Part II. Phytologia*, volume 16-18, pages 219-339, and 59-293.

[2]FERNALD, M. L. 1950. *Gray's Manual of Botany*. Eighth edition. New York, pages 1-1632.

[3]HOOPER, R. 1954. Blue Jay, 12 (2): 15. The Saskatchewan Natural History Society.

[4]SCOGGAN, H. J. 1957. *Flora of Manitoba*. National Museum of Canada Bulletin 140, p. 1-619, 15 plates, 1 fig.

CANADA PLUM
In Southwestern Alberta

by W. J. CODY* and KEITH SHAW**

In the fourth (1949), fifth (1956) and sixth (1961) editions of *Native Trees of Canada,* the distribution of Canada Plum *(Prunus nigra* Ait.) is given as follows: ". . . from the valley of the St. John River in New Brunswick westward throughout southern Quebec and southern Ontario, in the region on Lake Superior west of Port Arthur in western Ontario, and north to Riding Mountain in Manitoba. It is also reported at the fords of several rivers in southern Alberta . . .". The seventh edition of *Native Trees of Canada* (1969) by R. C. Hosie made no mention of the Alberta report. This, according to T. C. Brayshaw (*in lit.*), was deleted because no specimens could be found to substantiate the report.

In the fall of 1971, a small population of this species reaching a height of only 10 ft., was found near Cardston in southwestern Alberta. At that time only a minimum collection was made in the hope of securing flowering material in the spring. Unfortunately, the fall and winter of 1971-72 were extremely severe and buds and small twigs were killed back. Sucker growth did appear but there were no flowers. Herbarium material of this sucker growth was gathered together with portions of the dead branches which bore the characteristic spinescent twigs. Data are as follows:

SW Alberta, in deep loam soil on east-facing bank of coulee leading into Lee Creek 1-1/2 miles south of Cardston, elev. 3800 ft. (SE 1/4, Sec 4, Twp 3, R 25, West of 4), *R. K. Shaw 2170* (DAO); *1218* (BRY).

A second stand was found nearby after the leaves had dropped (NW 1/4, Sec 4, Twp 3, R 25, West of 4). During a spell of warm clear weather in November, 1972, another opportunity was taken to search the area for Canada Plum. On this search an uncounted number of plants with lower stems of various sizes from 1/2-inch diameter to 1 inch, 2 inches, 3 inches and a very few to 4 inches in diameter were found. Heights ranged from 3 ft. to 12 ft. Plants were also found along Lee Creek within a 1-mile radius of the original finds.

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Contribution No. 955 from the Plant Research Institute, Central Experimental Farm, Ottawa.

Most of the individuals were growing in the midst of very dense thickets of Chokecherry *(Prunus virginiana)* and Saskatoon *(Amelanchier alnifolia)*, with some clumps of Tartarian Honeysuckle *(Lonicera tatarica)*, in rather shallow sandy loam soil overlying the coarser gravels of the river bottom forest of Lee Creek. In the stands first discovered, the Canada Plum became obvious after sheep had grazed back the other shrubs and left shrubs of Canada Plum, Fireberry Hawthorn *(Crataegus chrysocarpa)* and Tartarian Honeysuckle untouched.

The presence of Tartarian Honeysuckle, an exotic species which is very common in the coulees, raises the question of the possible introduction of Canada Plum in this area. None of the situations where it was found, however, were likely spots for planting, and it is not to be found planted around the adjacent farmsteads. Also Mr. Cardwell, upon whose property the plum was found, has no knowledge of any plantings since 1927, and the next closest farmstead, once owned by the Cardwell family, has not been occupied since the late 1920's.

An enquiry to the Alberta Horticultural Research Centre at Brooks has revealed that Canada Plum shrubs had been sent out to individuals in the Cardston area in 1955, 1968 and 1969. Also some 'Tall Fruit Bundles' which probably contained some Canada Plum were distributed to the Cardston area between 1954 and 1966 (B. Casement, *in lit.)*. Unfortunately, however, their records do not go back beyond 1954, which is too recent to account for the larger plants found.

Canada Plum appears to be propagating itself in the Cardston area, at least in favourable years. From the statement in the earlier editions of *Native Trees of Canada*, the fact that the habitat is remote from farmsteads, and the evidence of the landowner, it would appear that Canada Plum in the Cardston area of southwestern Alberta does represent a wild, native population.

Keith Shaw

Miss Marnie Cardwell (age 12) beside small tree of Canada Plum near Cardston, Alberta. Sept. 30, 1971.

The collections and observations documented here definitely substantiate the earlier reports of the presence of *Prunus nigra* in southern Alberta. It would now be most interesting to examine similar situations in southern Alberta to ascertain the extent of its occurrence. The nearest known stands are in southeastern Manitoba, over 700 miles to the east, but the species should be looked for in the coulees and thickets west through Saskatchewan and in North Dakota and Montana, where it has not been recorded.

In the eastern part of its range, Canada Plum often reaches the stature of a small tree as much as 30 ft. in height. In the west, however, it is usually shrubby in habit. Canada Plum and the closely related Wild Plum *(P. americana)*, which reaches its western limit in southern Saskatchewan, may readily be distinguished from other

species of *Prunus* in the region, even when fruits are lacking, by their usually spinescent stems. Canada Plum may be separated from the Wild Plum by the rounded teeth of the leaves which end in a large gland rather than the teeth being finely upwardly acuminate, as in the latter species.

White Birch. Qu'Appelle Valley, Saskatchewan. Fred Lahrman

How Indians Used THE BIRCH

by M. A. WELSH*

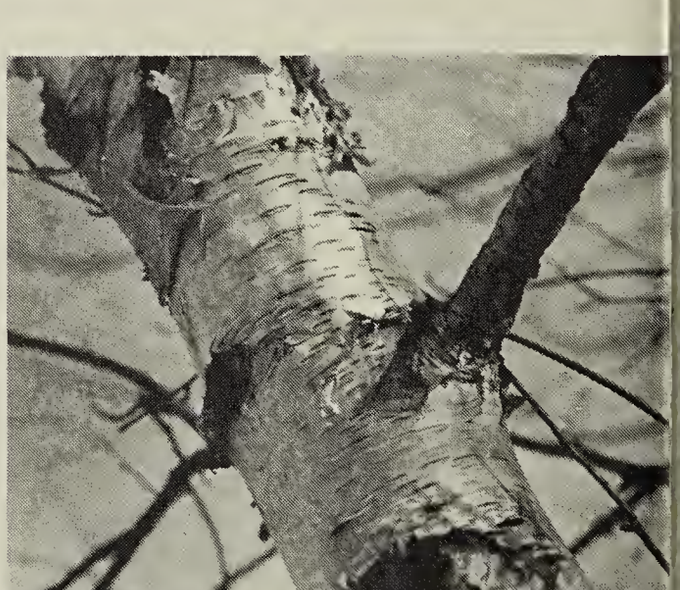
The first European explorers to reach North America found the native Indians using many plants, one of which was the birch, *(Betula papyrifera* Marsh.) known variously as White Birch, Paper Birch and Canoe Birch. Its range was wide, covering every Canadian province, the northern United States and Alaska. It provided the Indians in these areas with many of their needs, particularly food, shelter and warmth.

The principal part of the birch used for food was the sap, collected in the spring and either drunk as it came from the tree or boiled down to form a syrup. This practice was widespread, especially in those areas which were outside the range of the Sugar Maple *(Acer saccharum* Marsh.).

This past summer Solomon Mirasty, a Cree Indian of Pelican Narrows, Saskatchewan, related to me the method his grandmother employed in tapping the tree for sap. Two cuts were made through the bark in the form of an inverted V, with no cut across the bottom. The flap of bark thus formed was then drawn downward and formed into a trough through which the sap was directed to a birch-bark container placed beneath it. The collected sap was boiled down for about 24 hours until it formed a thick, black syrup which could be stored until needed, and was used as a sauce for fish and meat. Mrs. Nancy Ross, a Cree Indian of La Ronge, Saskatchewan, has provided similar information, although she was not aware of the mechanics of tapping the trees. She stated that the syrup was used as a sauce for fish and bannock. Alfred Montegrand, a Chipewyan Métis, formerly of La Loche, also reports the use of birch syrup on fish and other foods. At Buffalo Narrows I have seen a grove of birch trees with old tapping scars on them.

In addition to the sap, the cambium layer of the stem just under the bark was scraped off and eaten by Cree Indians. Angier recommends this as an emergency food which he states is pleasantly sweet and sustaining.[1] He also reports that the twigs, young leaves and sapwood, when steeped in hot water, make an excellent beverage with the aroma and flavor of wintergreen.

Many Indians made the bark into rolls for covering their dwellings. The trees, stripped for this purpose then died and dried out rapidly, providing a good source of fuel the following year for heating and cooking. Birch-bark has been a traditional tinder for starting fires throughout the forested area and the entire tree can be used for fuel while it is green. It is one of the few woods that will burn without seasoning; it burns slowly and holds a fire for many hours, an advantage when heat is required all night for warmth.



White Birch. Fred Lahrman

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(Condensed from Saskatchewan Archaeology Newsletter 38:6-11, Sept. 1972)

Birchbark canoe and Chipewyan Indian children. La Loche, Sask. June 28, 1943.
Fred Bard

All Indians living in the range of the birch made baskets from the bark, some being simple folded containers, others elaborately sewn, with the seams sealed with pitch to make watertight containers for transporting and even boiling fluids over a fire. Some baskets were decorated with applique cutout patterns or with incised or scraped designs. These were usually sewn with dyed roots, most often those of the Black Spruce (*Picea mariana* (Mill.)), although other species of spruce and pine have been used. Decoration with porcupine quills, either in their natural colour or dyed with various vegetable dyes, was common, although as a rule restricted to small, fancy containers.

A single layer of birch bark is often folded into quarters and a series of indentations made along the edges with the teeth. When unfolded, a symmetrical design appears. These designs are produced both for amusement and to make patterns for bead work and other fancy work. [3 5 12 16] . It is not a dead art; there are still people who bite designs, at least at Amisk Lake, Saskatchewan.

Jenness, discussing Canada's debt to the Indians, lists the birchbark canoe as one of the great gifts.[9] This frail craft carried trade goods and fur throughout Canada. Without it, our early explorers would have been hard put to have traversed the country at all, and certainly not with the speed and relative ease with which they did. It was light and made entirely of materials found in the forest. When damaged, repair materials were available there also.

Today's canoes follow the same shape as those made of birch bark, but the covering is of canvas and the planks and ribs joined with copper nails. In our area there are still craftsmen who can make birchbark canoes. There are so many good descriptions of the methods of making these canoes that it is unnecessary to describe the process here.[10 14]

Hoffman reports that the records of the Midewinin as given by Minabozho were kept on birch bark.[6] Record keeping on birch bark may be unique

to the Ojibwa, but Wintemberg reported graphic representations of the Thunderbird on birch bark by Dakota, Ojibwa, Plains Cree and Menomini Indians.[17]

Many Indians wrapped their dead in birch bark before burial.[7,8] In October, 1967, I examined and photographed two Indian burials at Cumberland House, Saskatchewan. These corpses had been wrapped in birch bark. A partially excavated burial in the archaeological laboratory in Saskatchewan shows evidence of birchbark wrapping. Mr. Harry Moody of Denare Beach reports that bodies unearthed near Pelican Narrows were wrapped in birch bark.

Gilmore reports that in the Missouri River Region finely-shredded birch bark was bound tightly in bundles and used as torches.[4]

The inner bark of the birch produced a brownish dye that required no mordant and gives a light brown colour to wool.[11,14]

Many tribes used the birch for medicine. The Ojibwa and Forest Potawatomi used the roots and twigs to obtain an aromatic oil for flavouring to mask unpleasant tastes in medicines.[14,15] The Seneca and Abenaki Indians used it in medicine to expel gas from the stomach.[13] The Chippewa cured stomach aches with it,[3] and the Cree used the wood with other materials to cure gonorrhea. A Cree-Métis of Buffalo Narrows described the procedure. Chips from the south side of Black Poplar (*Populus tacamahacea* Mill.), White Poplar or Aspen (*Populus tremuloides* Michx.) and birch, in equal quantities are bundled together with five stems of horsetail (*Equisitum* Sp.) and boiled three times in three successive waters in a lard pail. The entire quantity of each water is consumed. This treatment is said to cure gonorrhea in 5 days.

In formal medicine, tar extracted from birch bark has been used to treat skin conditions, the inner bark to reduce fevers, and the leaves to treat gout, rheumatism and dropsy.[2]

Spore tubes or a fungus (*Fomes fomentaris* (Fr.)) which grows on birch trees were burned slowly on a patient's joints to treat rheumatism by the Cree and Maliseet Indians. This material was also used as tinder in fire making.

To the Chippewa the birch is sacred, first because of its many uses and second because of the legend concerning Winebojo. After he had killed the young of the Thunderbirds, Winebojo fled and found safe refuge in a hollow birch log. After the Thunderbirds left he came out of the log and declared that henceforth this tree would be a benefit to the human race. As a result, the tree is never struck by lightning and the bark is the last part of the tree to decay. The short marks on the bark were made by Winebojo but the "pictures" on the bark are pictures of little thunderbirds.

It is doubtful if any other plant has been used by more people for more purposes than the birch. It has been a part of the culture of all the people who lived within its range.

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THE LAND, THE BIRDS

Through 50 Years In Aspen Parkland

by WILLIAM NIVEN*

My parents and uncle, originally from Scotland, moved from Winnipeg to our homestead in the aspen parkland, 5 miles north of Sheho in July, 1910. I was about 4 years old, and my brother George about 2. My brother and I still work together, farming the original 2 quarter-sections and about 5 more which we acquired later. We raise mostly beef cattle, growing also feed grain, for which this immediate district is best suited.

I became interested in nature, especially birds, while attending Newburn country school. Some of the teachers and some of the boys were also interested and I learned from them. Since then, I have simply observed the birds as I went about my daily farm work or on trips to Sheho, Invermay or Foam Lake.

My first bird identifications were based on Nuttall's "A Popular Handbook of the Birds of the United States and Canada", obtained in 1920, and later on Taverner's "Birds of Canada", bought in 1943. I have had binoculars for about 15 years.

Most years I recorded only spring migration dates for each species, although I have a few fall dates. I had recorded 86 species by 1924, 140 by 1943, and my list now includes 181 species.

The Land

Before the arrival of the white man, wildlife had been relatively undisturbed. The Indians took buffalo and other animals for food and trapped others for the fur-trade. With the change to agriculture, the environment changed greatly. Some species adapted, some so well that they increased noticeably, while others decreased.

In the parkland north of Sheho, there was a greater variety of plant and animal life in the early 1900's than on the open prairie. For this reason, the changes with settlement affected more species here.

When we arrived, the country was fairly heavily treed in places, mainly along the creeks, with trembling aspens, balsam poplars and willows. There were many large open grassy areas around lakes and marshes, as well as on the lighter sandy or gravelly lands. The amount of open area varied greatly from one quarter-section to another. Some land had very little bush and was readily broken for cultivation but the better land was usually 50% to 75% bush. The average in this district was about two-thirds open land and one-third treed.

At first, only the best of the open land was broken by the plough. Gradually fields were enlarged by

* Sheho, Sask.

Using oxen to break land. Archives of Saskatchewa

taking out small bluffs of poplar and willow. Land clearing was a very slow and laborious job in the early years. The most primitive method was to dig out the roots with a grub-axe. Later a team of oxen or steady-pulling horses were used, hitched to a long chain, after one had cut the roots on one side. After the first World War, some of the larger farmers hired gangs of immigrants at 50 cents a day to cut bush and dig roots. At the same time, they usually had a large steam or kerosene-burning tractor to pull out the large trees and to pull a large single-bottom breaking plow. A few had hand-powered stump-pullers. At one time we had a stump-puller powered by a team of horses, pulling a pole attached to a cable drum. A stump-puller is simply a winch, anchored to a larger tree. For a while, we also used a heavy steel-wheeled tractor for direct pulling. At most we would take out a few willow and poplar bluffs to enlarge fields, never more than 1 or 2 acres a year. Some of the larger operators, depending on how much help they had, were known to clear 20 or 30 acres a year.

None of these methods can compare with the modern bulldozer. Thousands of acres of both private land and community pasture are now cleared yearly in our district. Whereas the older methods had little effect on wildlife, now substantial areas of wildlife habitat are being destroyed each year.

In the early days, only the better soils were cleared for grain farming. Now, even poor marginal land is cleared of trees, particularly in community pastures. Perhaps the worst example is the former "Beaver Hills Forest and Game Reserve", 24 miles south of here and once ideal habitat for deer and other wildlife. This has been cleared too extensively. Surely less complete clearing would have allowed slower runoff in spring, more retention of water and less flooding downstream — and the increased water and shelter would have benefited its use as a pasture. Willows along a stream prevent erosion and those around sloughs retain moisture; both offer ideal habitat for wildlife. I have seen places where every tree has been taken out, even on the steep banks of streams.

Sloughs were once more numerous than today. We have also many small lakes, forming a chain extending northwest to the Fishing and Quill Lakes. Thus we are on a migration route for waterfowl. Extreme variations between flood and drought have occurred over the years. Severe

drought occurred in the late 1890's, when oldtimers report most of the lakes were dry. Another marked drought occurred in the 1930's. Wet spells were prevalent about 1912 and again in the 1950's when all sloughs and lakes were filled.

Prairie fires were a hazard only in the early years, particularly in dry periods in spring and fall.

The Birds

In the days of the threshing machine, straw stacks were an attraction to Sharp-tailed Grouse, Meadowlarks and others, because of the waste grain in and around them. Now the combines often leave as much on the fields for the birds, though it is less concentrated. When grain was in stooks, it was only occasionally damaged by ducks and geese. Now most of the grain lies in windrows after swathing and is more available and often heavily damaged by waterfowl, particularly if the harvest is delayed. Geese can usually be kept off by scarecrows and other devices, but ducks, once they start feeding on a field, are almost impossible to scare off.

With the drainage of smaller potholes and sloughs in fields, some species of birds have decreased. The Red-necked Grebe was once a common resident of the larger sloughs and lakes, but now is much less abundant. The same is true of the Canvasback, Redhead, Lesser Scaup, Ruddy Duck and White-winged Scoter. Many species of ducks have decreased in numbers since the early days, for the reasons already mentioned and because of the destruction of edge habitat. This especially affected the Mallard and Pintail. In the early days, Sandhill Cranes nested sparingly; I

Stump pulling with horses - 1910 Archives of Saskatchewan

saw one pair with young about 1920 on the flats 4 miles north of here. For the past 3 years, Sandhills seem to be increasing again and I saw migrating flocks totalling thousands in the fall in 1972. They do not nest here now. Bobolinks were more common in the damp meadows in the 1920's and were seen yearly until 1942. None were seen between June, 1942, and June, 1948, but a few have been seen in most of the recent years.

The destruction of bush habitat has resulted in even greater changes. Ruffed Grouse were once common all year, but now persist only in the areas where sufficient heavy bush remains. For similar reasons, there has been a decrease in the numbers of Great Horned and Long-eared Owls, Downy and Hairy Woodpeckers and Yellow-shafted (Common) Flickers. Purple Martins, which nested in hollow trees, have decreased and only a few remain where their holes have not been taken over by Starlings. Black-capped Chickadees and Baltimore (Northern) Orioles have also declined as the wooded habitat decreased and even the Crow has shown some decline in recent years.

Some species of the open prairie suffered when it was converted to cultivation. Most severely affected was the Upland Plover (Upland Sandpiper), once common on grassy meadows when the settlers first arrived. They disappeared entirely about 1927, reappeared in smaller numbers in 1939, but became scarce again after 1960. More recently, with heavier overgrazing of pastures, the Marbled Godwit has also decreased. Greater Prairie Chicken (Pinnated Grouse) first appeared from Manitoba about 1905, according to the early settlers. At one time they had a dancing ground on our farm and were fairly common until about 1925 or 1926. As a larger percentage of the land became cultivated and fields became larger, they found it difficult to adapt, seemingly needing fairly large areas of wild grassland. They disappeared entirely in the 1930's.

Sharp-tailed Grouse showed better adaptation than the Pinnated Grouse, especially in the days of stooking and threshing of grain. In the dry 1930's, flocks of 100 and more gathered to feed at stacks of wheat and oats containing immature grain, cut for feed. There were three dancing grounds within 3 miles of our farm: 1/2 mile west, 1 mile north and 3 miles northeast. Now there is only the one dancing ground, 3 miles northeast. The largest flock in the past year was 25. I saw only two broods in 1972, one with one chick and another with five; many eggs may have been frozen during the cold nights of late May and early June.

The Western Meadowlark, once an abundant resident of fields and pastures, has decreased in numbers in the past 10 years as overgrazing has become more common, with less nesting cover.

A. R. Smith

The decrease in nesting hawks seems unrelated to decreasing areas of bush, since the Swainson's Hawk, which prefers open areas, actually decreased as more bush was cleared. This oc-

curred most noticeably in the early 1940's, coincident with a decrease in the numbers of its chief prey, the Richardson's Ground Squirrel. There was then a corresponding increase in Red-tailed Hawks, but this species has also decreased in the last 2 or 3 years, now that nesting trees are becoming more scarce. Sparrow Hawks (American Kestrels) once resident, are now seen only in migration. Pigeon Hawks or Merlins have not been seen in migration for many years.

Decreases in other species seem unrelated to changes in habitat. The White Pelican, prior to 1950, was much more common in migration, with flocks of up to 300 birds. The Slate-colored Junco (Dark-eyed Junco) was very common in spring and fall migrations for many years but has come through in smaller numbers since about 1960. The Water Pipit was a fairly common migrant, especially in spring, until about 1966; since then it has been totally unnoticed and presumably very scarce. I have no idea why the numbers of breeding Brewer's Blackbirds and Common Grackles decreased; both nested in small colonies around farmyards but the Brewer's is now an uncommon resident and the Grackle only a migrant. In recent winters, Snow Buntings have not occurred in the large flocks of previous years.

Unlike the situation in cities and towns, where tree planting has greatly increased the numbers of winter birds, we have noticed only a few changes here in the country. The Gray Jay, not present in the early days of settlement, became fairly common in fall and winter sometime in the 1920's with six or 10 moving about the district. Then, until 1946, there would be only a few some winters, and since then most winters have had none, or at other times a single individual has been seen. Ravens were not recorded until September 23, 1947, and since then, up to two or three have been present most years at some time between late fall and spring. An unusual invasion occurred in 1972 through the end of December, with a high of 19 Ravens on November 7. Evening Grosbeaks were absent until 1935 or 1940, when the maples grew up and produced seed; apart from the winter of 1970-71, when only one individual was seen, they have occurred most winters since.

Several species were unknown in 1910 and later appeared. The first Mourning Dove was seen in 1920 (May 30); there were few at first but they steadily increased in numbers over the years. The first Gray Partridge appeared about 1928 and quickly increased until there were two or more coveys around each farmyard. For the past 5 years, however, there has been only a single covey in the 5 miles between our farm and Sheho. The first Western Kingbird appeared in 1942 (June 7); since then it has nested once in a spruce tree in a farm shelterbelt, 3 miles northeast of our farm. We seem to be at the northern edge of its range. Usually only one or two are seen each summer.

No Black-billed Magpies were seen in our neighborhood until about 1926. They increased greatly in 1938, with large numbers for the first time in 1939; since then they have become very plentiful. They have few natural enemies, but I have seen a weasel climbing to a magpie nest and afterwards found feathers on the ground below. The Mountain Bluebird was not observed here, even in migration, until 1938 (April 3). Now they are common in spring and fall migration and a few pairs nest in suitable woodpecker holes. Barn Swallows were completely absent when the district was first settled. The first pair I saw were nesting in a deserted house about 1917, but my first recorded arrival date was May 23, 1920. There were no Cliff Swallows during all the early years, but J. R. Foreman of Yorkton reported a colony of 600 at a farm 2 miles north of Sheho in 1942, and my first recorded arrival date was May 29, 1943.

The Great Crested Flycatcher was not observed prior to 1956 (June 23). They were also seen in 1959, 1963 and

since 1967 have appeared each year. In 1972, a pair with nearly full-grown young was seen and, no doubt, nested nearby. Starlings first appeared in this area on April 16, 1944 and since then have increased enormously. For many years, they did not winter, but now a few stay around feedlots all winter. They migrate south in large flocks in fall and usually return in the last half of March. I did not recognize a Pine Siskin until October 14, 1944; most years they are now seen erratically in spring, summer or fall.

The changes in habitat produced by more intensive farming have proved attractive for a few species. The Killdeer, which requires little or no grass cover for nesting, has increased over the years. Horned Larks have also increased, as they are exceptional in their preference for cultivated fields over other habitat. Though many nests are destroyed by spring cultivation, they usually renest with success. The Eastern Phoebe has also increased, particularly as buildings have aged or become deserted. The Robin has become common with settlement and is almost semi-domesticated. In the last 10 years, with an increase in the number of cattle in the district, Cowbirds have shown at least a proportionate increase, and have become a greater menace to the nests of small ground-nesting birds. The Crow at first increased with settlement, thriving in the presence of man, and his agriculture, but as the number of trees has diminished in recent years, they have shown a downward trend once again.

In spite of diminishing water areas, a few birds associated with water have actually shown an increase. The Great Blue Heron was first noted on May 28, 1943, but apart from fall records in 1947 and 1949, was not seen again until June 20, 1952. It has since been fairly common in spring migration, with an occasional solitary bird or pair seen during summer or fall. They have not been known to nest near here. The larger subspecies of Canada Goose has definitely increased with settlement, particularly in the last 10 years, perhaps partly due to larger grain fields for feeding. They have always nested around the local lakes and marshes and had a very successful year in 1972. Snow Geese were seen in spring migration in 1919, 1923, 1926, 1927 and then not until 1947 and 1954, but they have been seen most years since.

White-fronted Geese were not recorded in migration until 1939, but have been seen almost every year since. One wonders whether this indicates a change in their migration pathways. American Avocets were not recorded until June 2, 1945, and were then seen in 1946, 1960, 1962, 1963, 1965 and 1966. The Spotted Sandpiper was not recorded until May 20, 1951, but has been seen most years since then, and nests at suitable places, including our dugout in June, 1972.

The Black-billed Cuckoo has had cycles of abundance and scarcity, being quite common most years until 1944, and particularly common during the tent caterpillar invasion of 1940-42. It was then absent in 1945 and 1946, seen only once in 1947, present from 1948 through 1952 and then absent until 1956, present through 1967, absent in 1968 and 1969 and common again in 1972.

Smith's Longspurs were unusually common in migration for 11 years between 1944 and 1955, missing only 1953, but haven't been seen before or since! Our first record was October 14, 1944, when fairly large flocks of up to 300 began a 3-week stay. In 1945, 1946, 1947, 1949, 1950 and 1952, they were seen both spring and fall.

Chestnut-collared Longspurs were first noticed May 31, 1942. They established two or three small nesting colonies in this district on grassy upland meadows, one immediately north of Salt Lake and the other just east of Silver Lake, with 10 to 20 pairs in each colony. This seems to be the northern limit of their range. They were present in 1943, 1944, 1945 and 1949, but absent since, apart from a possible nesting pair seen July 6, 1971. Baird's Sparrows are an uncommon

Clearing stumps by bulldozer — Archives of Saskatchewan

species here. They were first noted and presumed nesting on ungrazed upland meadows immediately north of Salt Lake on May 28, 1944. They were also seen or heard in 1945, 1946, 1948, 1949 and 1950, but have not been noticed since.

In conclusion, I predict that there will be a great deal more wildlife habitat destroyed in our district as time goes on. Our native birds, animals, trees and flowers will continue to decrease. Our natural resources, in my opinion, have a value that transcends economics, in providing beauty, variety and an interest outside our daily work, without which life would be drab indeed. I, therefore, wish to suggest that more wildlife sanctuaries be established in suitable locations, particularly along rivers and lakes, before these areas too are cleared for pasture. There are still many such places which are better suited for wildlife than for any other purpose. Now is the time to plan land use in order to retain wildlife for future generations.

I wish to thank Dr. C. Stuart Houston for his encouragement, for his many questions and suggestions and for typing two drafts of this article.

Less Common Species:

Eared Grebe: recorded only 5 years, all between 1947 and 1954.

Western Grebe: only two or three observations in 54 years. Only recorded date is May 12, 1950.

Pied-billed Grebe: recorded only in wet years. A pair with young on a large slough, partly on my farm, on July 27, 1957.

Osprey: only one record, May 10, 1949.

Peregrine Falcon: only one record, June 2, 1945.

Willow Ptarmigan: though I did not see it, a neighbour reported a straggler that failed to return north, May 21, 1958.

Ruddy Turnstone: seen only once, on Salt Lake, May 22, 1959.

Red-backed Sandpiper: two records, May 18, 1950 and May 15, 1959.

Buff-breasted Sandpiper: one record of two on May 20, 1955.

Hawk Owl: one record, May 3, 1946.

Red-headed Woodpecker: one record, July 6, 1946.

Say's Phoebe: one in a flock of Mountain Bluebirds on August 27, 1947, and another on April 20, 1962.

Western Wood Pewee: arrival dates only for 1939, 1940 and 1942. A pair was present in the poplar bush near our north field from June 3, 1948, and stayed to nest; the young were seen with the parents on August 10.

White-breasted Nuthatch: a single record, May 22, 1920.

Cape May Warbler: once, May 29, 1947.

Black-throated Green Warbler: once, May 29, 1927.

Chestnut-sided Warbler: twice, May 29, 1927, and June 2, 1945.

Ovenbird: one record, May 22, 1959.

Mourning Warbler: once, May 29, 1927.

Lark Sparrow: once, several at cattle feed trough, May 14, 1966.

GLAUCOUS-WINGED GULL AND THAYER'S GULL

At Calgary, Alberta

by D. V. WESELOH* and VIRGINIA LANG**

While making observations at several of the Sanitary Landfill Sites in Calgary, Alberta during the spring of 1972, we observed an adult Glaucous-winged Gull as well as what later proved to be an immature Thayer's Gull.

On the morning of May 3, 1972, the senior author located the adult Glaucous-winged Gull sitting on a dirt mound at the Forest Lawn Sanitary Landfill Site in east Calgary. The bird was sitting with a small group of California, Ring-billed and Herring gulls.

While the identification of gulls can indeed be a frustrating and difficult task at times, the features of this bird were distinctively seen and compared with those of the other three gull species present. The adult Glaucous-winged Gull was characterized by a dark iris, flesh-pinkish legs, a large massive bill marked only by a red spot on the lower mandible and, as observed in flight and when sitting, the complete lack of black on the wing, wing-tips or mantle. The mantle and the entire wing, except for the slight leading and trailing edge of white, were pearly gray.

The dark iris (eye) separates this gull from all other white-headed gulls on the west coast except the smaller California and Mew gulls. The leg and bill characteristics are shared only by the Herring and Glaucous gulls, while the lack of black in the wing-tips is duplicated only in the Glaucous Gull.[8]

This gull was observed from 11:45 a.m. to 14:30 p.m. at distances of less than 100 yards through a 20-40X binocular telescope. It was present at the Forest Lawn site on at least May 3 and 4, 1972, and was observed by Hattie Boothman, Rob Owens and Paul Whitney, in addition to the authors, during this time. Photos confirming the absence of black in the wing-tips have been deposited with Professor W. Ray Salt, University of Alberta, Edmonton.

The history of the Glaucous-winged Gull in Alberta is hazy at best. There is questionable evidence that an immature specimen was collected near Calgary sometime before 1936.[15] This specimen, however, is not present in the Edmonton, Calgary or Ottawa collections. Conclusive proof of the Glaucous-winged Gull in Alberta was provided when immature specimens were secured from Bear Lake in September, 1958 and August, 1959. In addition, during the fall of 1959, 10 - 12 second-year Glaucous-winged Gulls were also observed in the Bear Lake area[12]. In 1960 an immature banded Glaucous-winged Gull was recovered and later released near Therien Lake at St. Paul, Alberta[7]. The gull had been banded as a chick the year before at Christie Islet, Howe Sound, B.C.

Stirling reported an adult Glaucous-winged Gull at the Valley View Alberta, garbage dump in the Peace River District, 65 miles east of Grande Prairie.[14] Rand makes no mention of the Glaucous-winged Gull in his survey of the Birds of Southern Alberta.[13] The present record thus represents at least the sixth occurrence of Glaucous-winged Gulls in Alberta, only two of which have involved adult birds and perhaps only one of which has occurred in the southern half of the

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province. This heavily biased distribution of sightings in favour of the north-central portion of the province appears to add credulence to Merilee's speculations on this gulls' avenue of arrival in Alberta (see below).

The Glaucous-winged Gull is a bird of the Pacific Northwest Coast; inland records are rare indeed. Godfrey considers the gull as accidental in Alberta.[5] R. W. Campbell of the British Columbia Provincial Museum (*in press*) states: "The status of the Glaucous-winged Gull in interior B.C. is sketchy at best." He adds that there is a recent record of a Glaucous-winged x Herring Gull pair breeding in the Okanagan in the summer of 1972. Merilees (*in press*) reports that he has never seen nor does he know of any reports of Glaucous-winged Gulls in the Castlegar-Nelson area of British Columbia, though he feels,

> . . . it [the Glaucous-winged Gull] was possibly a regular visitor in the past before all the dams put a stop to the salmon runs which came up as far as the Kootenay River and south Slocan and up the Columbia past Revelstoke. The first records for Alberta were in the Peace River Country which possibly supports my contention as these gulls quite likely followed up the Fraser [River] and the route of the spawning salmon.

R. W. Campbell relates two cases in which birds of this species were captured as pets on the Pacific coast, taken inland more than 500 miles and then released.[4] He also tells of a dead Glaucous-winged Gull recovered in Iowa which may have been transported there atop a railroad freight car which came from the Pacific Northwest. While it is difficult to attribute the wanderings of birds outside their normal range to any single cause, the above instance suggests that human interference cannot be ruled out.

Approximately 2 weeks later, on May 19, 1972, while observing gulls at the Spy Hill Sanitary Landfill Site in northwest Calgary, we observed and later collected an immature gull of uncertain species. Upon initially sighting this bird, we observed that it possessed the plumage characteristics of an immature Glaucous-winged Gull and, in fact, it was collected as such.

Upon examination of the specimen, W. E. Godfrey (*in press*) confirmed the similarity in coloration with the Glaucous-winged Gull but noted that "the bill is too slender and short for that species and the tarsus also is not long enough." He identified the specimen as an immature Thayer's Gull.

The gull was initially observed during mid-morning as it sat loafing with Herring, California and Ring-billed gulls. It was viewed repeatedly by both authors during the course of the morning and, later in the afternoon, by Rob Owens. The lack of any black or dark brown in the wing-tips, the overall light colouration (as compared to second-year Herring Gulls) and the large size made it possible to locate the bird at will during the day. The gull remained in close proximity to second-year Herring Gulls for most of the day and was clearly discerned from them.

Perhaps owing to the long-time status of Thayer's Gull (*Larus thayer's*) as a subspecies of the Herring Gull (*L. argentatus*, see below), sightings of this species have not been reported from Alberta. The only previous record of Thayer's Gull in Alberta was related to us by Professor Salt (*in press*, from Rowan[10]) and revised by Rowan and Hohn[10]).

> " '*Larus argentatus thayeri*, 1 record identified by J. Dwight from specimen (coll. Beaver Lake, October about 1928).' Rowan had a habit of calling Beaverhills Lake, Beaver Lake, and I suspect that this specimen was taken at Beaverhills Lake."

In light of this record, Thayer's Gull had not been reported from Alberta for approximately 44 years.

Thayer's Gull was first described and named by Brooks[2] but had been known to the early explorers of its range by various names. Its taxonomic position has almost always been in a continuous state of flux. Until recently it was most often considered to be *L. argentatus thayeri*, a subspecies of the Herring Gull.[1] However, information

from Salomonsen[11] and later MacPherson[6] and Smith[13] show that the two species, *L. argentatus* and *L. thayeri*, breed sympatrically (their ranges overlap but they do not interbreed) and that they differ behaviourally and anatomically. Godfrey[5] and Salt (*in press*) thus treat them as distinct species.

Godfrey lists the breeding range of Thayer's Gull as the Canadian Arctic from Banks Island to north and central Baffin Island and from central Ellesmere Island south to northern South Hampton Island.[5] It is casual on Lake Athabasca in northwestern Saskatchewan in the summer and winters in coastal B.C.

Brown recently reported Thayer's Gulls wintering off the coat of western Newfoundland and speculated that perhaps those Thayer's Gulls breeding at the eastern edge of their range winter on the Atlantic coast rather than the Pacific.[3]

We wish to express our appreciation to W. Ray Salt and W. Earl Godfrey for their efforts in tracing the early history of both these gull species in Alberta.

[1]AMERICAN ORNITHOLOGISTS' UNION. 1957. *Checklist of North American birds*. Fifth edition, Baltimore. 691 pp.

[2]BROOKS, W. S. 1915. *Notes on birds from East Siberia and Arctic Alaska*. Bull. Mus. Comp. Zool. 59: 361-413 (not seen, *from* MacPherson. 1961).

[3]BROWN, R. G. B. 1972. *Thayer's Gull wintering off western Newfoundland*. Can. Field-Nat. 86: 294.

[4]CAMPBELL, R. W. 1971. *Misleading Glaucous-winged Gull recovery from Iowa*. Bird Banding, 42: 127-129.

[5]GODFREY, W. E. 1966. *The birds of Canada*. Nat. Mus. Can. Bull. 203, Queen's Printer, Ottawa. 428 pp.

[6]MacPHERSON, A. H. 1961. *Observations on Canadian Arctic Larus gulls*, and on the taxonomy of *L. thayeri* Brooks. Arctic Inst. North Amer., Tech. Papers, No. 7: 1-40.

[7]MERILEES, W. J. 1961. *First Alberta record for the Glaucous-winged Gull*. Can. Field-Nat., 75: 170.

[8]PETERSON, A. H. 1961. *A field guide to western birds*. Houghton Mifflin Co., Boston. 366 pp.

[9]RAND, A. L. 1959. *The birds of southern Alberta*. Nat. Mus. Can. Bull. 111. Biol. Series 37. Ottawa. 105 pp.

[10]ROWAN, W. (undated). *A provisional list of the birds of Alberta*. Revised by W. Rowan and E. O. Hohn, 1950 (not seen, cited by W. R. Salt *in litt.*).

[11]SALOMONSEN, F. 1950-1951. *The birds of Greenland*. Parts 1-2. Copenhagen, Ejnar Munksgaard. 608 pp. (not seen, *from* MacPherson, 1961).

[12]SALT, W. R. 1966. *Some unusual bird records from the Peace River District*. Can. Field-Nat. 80: 114.

[13]SMITH, N. G. 1966. *Evolution of some Arctic gulls (Larus): An experimental study of isolating mechanisms*. Ornithological Monographs No. 4. American Ornithologists' Union.

[14]STIRLING, D. 1967. *Sight record of a Glaucous-winged Gull for Alberta*. Blue Jay, 25: 131.

[15]TAVERNER, P. A. 1936. *Preliminary list of the birds of Alberta, checked and annotated by F. L. Farley and Ray Salt*. Autumn 1937. (not seen, cited by W. R. Salt, *in press*).

WHITENESS IN AN AMERICAN WIGEON

by MOE MARESCHAL*

On July 7, 1972, I made an observation of an American Wigeon (Baldpate) that is of interest. My family and I were at Waskesiu, Saskatchewan, and as that particular day was rainy, my 4-year old daughter suggested we go to the Heart Lakes to feed the ducks.

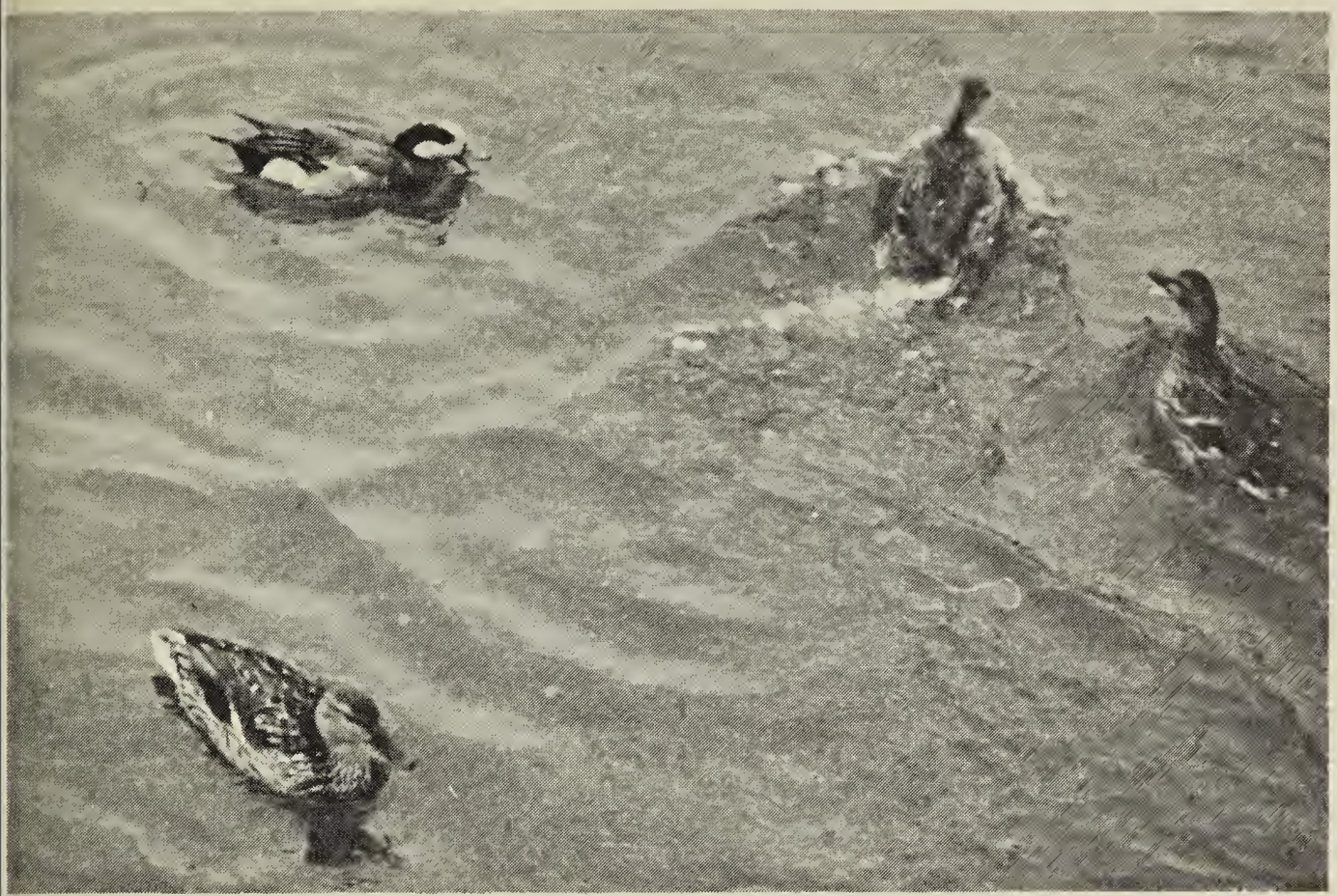
We did so, and perhaps the entry in my field book will better convey what we saw:

> 7/7/72 Cool- approx. 65° - nimbo-stratus - light rain - no wind. Went to Heart Lakes - saw the usual mallards - was baldpate there that was different than usual - cheek patches and throat were white instead of grey. Took 3 pictures with Kodak.

I have looked through my available sources but have not found reference to the white throat and cheeks.[1] [2] [3] [4] The bird's plumage was normal, including the green eyestripe, with the exception of the above characteristics.

A close examination of Audubon's painting and Peterson's drawings, shows that the grey of the cheeks and uppper neck are due to a mixture of separate dark and white feathers. It is

*Birch Hills, Saskatchewan.



White-faced Wigeon. Moe Mareschal

logical that if the dark feathers were absent, the cheeks and throat would be white. But the remainder of the duck was normally coloured. If a mutation had occurred that eliminated or reduced the dark colouration of the feathers, the bird would have been an albino or a partial albino.

One possibility which, I hastily admit, is highly problematical, is the analogy to the Himalayan strain of domestic rabbits. If these rabbits, when young, are exposed to the cold, a genetic factor becomes operational resulting in a colour change from white to black of those parts of the body that dropped below a certain temperature. I am not aware that such a phenomenon occurs in birds.

Another possibility is a somatic mutation — one in which the colour change was not transmitted through the sperm or egg of the parents, but occurred after fertilization in those cells of the embryo that eventually became the feathers of the cheek and throat. Again, however, I must speculate that the change would have occurred only on a part of the chromosome that controlled the dark pigment of the feathers and not affected the green characteristic. This is possible because pigmentation in animals is usually due to the action of several genes, so that the greying gene may have been altered, but the greening gene, possibly because of being located on a different part of the chromosome (or on a completely different chromosome) was not affected.

If such were the case, this characteristic would not be passed on to the offspring because the change only occurred in cells that do not become sperm (this was a male). However, if this colour change were due to a mutation in a chromosome that was within a cell in the gonads of the parent, then we could expect more Wigeons with this characteristic. Thus a new strain of Wigeon could result.

[1]AUDUBON, J. J. 1965. *The Birds of America.* Macmillan Co. New York.

[2]PETERSON, R. T. 1947. *A Field Guide To The Birds.* Houghton-Miflin Co. Boston.

[3]THOMPSON, S. 1963. *Eighty water birds and birds of prey.* Book Society of Canada.

[4]WETMORE, A. 1965. *Water, prey and game birds of North America.* National Geographic Society, Washington, D.C.

There are at least 22 Bald Eagles in this photograph. It was taken at Mile 3 on the Haines-Alaska Highway in January, 1973, by Susan Tubby, of Saskatoon, now living in Whitehorse, Yukon. This enlargement was made from part of a 16-mm. negative.

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THIRTEENTH ANNUAL NESTBOX REPORT

Of the Brandon Junior Birders

by JACK LANE* and CHRISTOPHER MARTIN**

Due to the very mild and open winter of 1972-73, our club set out a record number of nestboxes, over 650 before the year's first bluebirds appeared this spring. Most of the boxes were built and donated by a retired railroader, W. E. Forsyth. Due to his continuing efforts, our weekly winter nest-building bees are now finished. With a present total of over 4,100 nestboxes scattered along more than 1,400 miles of nestline, it is no longer practicable to attempt a check of the nests and, beginning with this report, we will estimate all nestings of bluebirds.

Noteworthy this year is a decrease in the number of nestings of the Eastern Bluebird. Some effort was made to check the nestings of this species but it was not comprehensive, and a combined check and estimate shows a drop of 25 nestings from last year. We believe this may be attributed to the increasing numbers of nestboxes being set out by two groups in the Selkirk-Winnipeg areas. Since our local Eastern Bluebirds pass that way in spring migration, it appears quite likely that more and more of them will stay in eastern Manitoba to raise their families.

One of our new nestlines, running north from Kirkella to north of Russell, has James Spear in charge of it and others around Russell. The highlight of his report is the nesting of a pair of Easterns in the Assiniboine Valley west of Russell. After enlisting the aid of our local biologist, Larry Bidlake, in the fight against the plague that decimated the first-broods of Mountain Bluebirds both in 1970 and 1972, the malady did not appear this year. We are inclined to blame this every-other-year epidemic on blood-sucking Black flies. Bidlake had provided us with a spray to be used in the nestboxes.

This year also yielded our fifth example of a male hybrid. Rather late in the summer he took over a nestbox on the Hooke Ranch, south of Camp Hughes; he was mated to a normal Eastern female that laid four eggs. Since two earlier crosses between a hybrid male and a normal Eastern hen had produced only one baby from a total of 11 eggs, we thought this 1973 pair might have infertile eggs. They confounded us by hatching all four eggs.

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Among the older nestlines, Mountain Bluebirds appear to have reached the saturation point in nestings; notable among these are the SOUTHEAST LINE, run by Ed Robinson, and the SOUTHWEST LINE of Art Giles, as well as the TRANSCANADA LINE.

The common House Sparrow has now assumed the title of chief enemy of the bluebirds. We have previously noted in the *Blue Jay* for December, 1970, how this pest had taken over the BRANDON-GLADSTONE-AUSTIN LINE. The same calamity overtook the NORTHWEST LINE this year; where a day's banding last year yielded 265 bluebirds on this route, the total for a day this year was 38 banded. Sparrows had taken over about two-thirds of the nests, cornering and killing the adult bluebirds when they got in the way. Little can be done to combat these tough vandals, and the only solution seems to be to move the entire nestline to a new area.

Lack of time this season limited the banding of bluebirds to only 1,684, but this does bring our four-year total to over 10,000 bluebirds banded. Our estimated nestings this season follow:

Mountain Bluebirds	825	Tree Swallows	2450	Starlings	10
Eastern Bluebirds	150	House Sparrows	225	Deer Mice	90
Hybrid Bluebird	1	House Wrens	35	Red Squirrels	10

1972 ALBERTA RAPTOR BANDING REPORT

by CHRIS S. REES*

1972 proved to be a highly successful year for the group of Albertan raptor banders with a final count of 1,399 birds of 22 species banded. This brings the total raptors banded by the group to approximately 3,840 since 1967. The banders involved were: Harry Armbruster, Rod Burns, John and Nial Campbell, Tom Donald, Richard, Ken, Kip and Kelly Fyfe, Ron Gallant, Bob Gehlert, Michael J. Hampson, Pat Harris, Keith Hodson, Wolfe Hoffmann, Mike Johnson, Edgar T. Jones, Lynne and Brian Kemper, Brian Nicolai, Chris Rees, Tom Russell, Dave Schowalter, Rich Svrcek, Ken Trann, Phil Treffery and Bruce Treichel.

Early in the winter of 1971-72 several Gyrfalcons were sighted. Snowy Owls were common but difficult to catch in the later part of the winter. These owls are again common this winter (1972-1973) and perhaps a little more responsive to trapping technique. Sparrow Hawks were reasonably numerous on the spring migration but proved to be so difficult to trap that several banders became discouraged and went on to band other species. This resulted in a drastic drop in the number of Sparrow Hawks banded as compared to the 1971 count. Both Long-eared and Short-eared owls were common this summer. Two large concentrations of Short-eared Owls could be noted, one north and one south of the city of Edmonton. Several members of the group worked very hard in the area south of the city finding 18 to 20 nests. Several of the nests found north of the city were destroyed either by farming operations or by predation. Long-eared Owls could be found nesting in nearly every willow and poplar tangle and others were heard hooting from heavier woods earlier in the spring. These large concentrations of eared-owls probably indicate a high population of mice and voles which in turn could explain the poor success in Sparrow Hawk trapping.

The highlight of the fall had to be the tremendous movement of Goshawks into and through the district. The use of the "swede" trap proved to be very effective

*No. 2 — 13027 - 83rd St., Edmonton, Alberta.

against these large accipters. Two bonuses caught in the swede traps set for Goshawks were a Boreal Owl and a Hawk Owl. As of this writing (January 18, 1973), at least one other Hawk Owl and two Great Grey Owls have been spotted within 30 miles of the city. It will be interesting to see if later in the winter boreal raptors move out of the more northerly forest.

Two of the more interesting band returns that have been received so far involve Sparrow Hawks. An adult banded south of Edmonton on April 23, 1967, was retrapped and released in the same area on July 15, 1971. This particular bird, therefore, had a life span in the wild state of at least 5 years and indicates a strong tendency to return to a given area year after year. The other record is for an adult Sparrow Hawk banded at Fort Saskatchewan on July 24, 1970, and recovered at Munroe, Michigan, on October 22, 1971, indicating more easterly movement than would be expected. Unfortunately, the group has received a total of only 42 returns to date. The general feeling is that the total number of birds is now great enough that we should receive a larger number of returns in the future.

ALBERTA RAPTOR BANDING – 1972
Banders* and Number Banded

Species	*W.H.*	*R.G.*	*R.F. Alta*	*R.F. Non*	*K.T.*	*R.B.*	*E.J.*	*M.H.*	*B.G.*	*C.R.*	*Total*
Goshawk			6			1	2	5	14	9	37
Sharp-shinned Hawk							3		1	5	9
Cooper's Hawk			3		8		3	1	3		18
Red-tailed Hawk			1		9	91	25			2	128
Broad-winged Hawk		1			4	10			5		20
Swainson's Hawk			68		10	34	14			2	128
Ferruginous Hawk			217	18			1				236
Golden Eagle			21	11							33
Marsh Hawk					12	8	8			10	38
Prairie Falcon			215	32							247
Pigeon Hawk			79	21		4					104
Sparrow Hawk		5			11	32			9	5	62
Gyrfalcon				10							10
Great Horned Owl		3			25		3	2	3	28	64
Snowy Owl	17	3			4		2	1	2	5	34
Hawk Owl					1				8	2	11
Great Gray Owl							10		4		14
Long-eared Owl		3			47	8			17	34	109
Short-eared Owl		4			76	7			7		94
Boreal Owl										1	1
Saw-whet Owl							1			2	3
TOTALS	17	19	610	92	207	195	72	9	73	105	1399

*W.H. – Wolfe Hoffman; **R.G.** – Ron Gallant; **R.F. Alta.** – Richard Fyfe, Harry Armbuster and Canadian Wildlife Service summer students and volunteer help; **R.F. Non** – includes Quebec, Yukon, N.W.T. and Saskatchewan records; **K.T.** – Ken Trann, Brian Nicolai, Rick Svcrek ; **R.B.** – Rod Burns; **E.J.** – E. T. Jones; **M.H.** –M. J. Hampson; **B.G.** – Bob Gehlert; **C.R.** – Chris Rees, Bruce Treichel.

GRAY SQUIRRELS

AT WEEKES, SASKATCHEWAN

by DONALD HOOPER*

In December, 1972, a Gray Squirrel was shot in Ron Fullerton's yard about 10 miles northeast of Weekes, Saskatchewan. This specimen was donated to the Saskatchewan Museum of Natural History in Regina. There is a previous record of another one taken in December, 1971, in the same yard. There is also an old report of one taken 2 miles from this locality about 15 years ago. This specimen was described as a large, grey squirrel, living in a granary in the winter time. It was finally shot and skinned and the hide was sent to the fur market in Prince Albert. It was returned because of no value (proving that it was not a Red Squirrel). After that the owners tried to sell it to Lund's Wildlife Exhibit in Prince Albert who said that they would surely have wanted this rare Saskatchewan species if it had not been skinned.

It has been thought by some that Gray Squirrels have been introduced in this province far from their natural range. This could be true in some cases, but I would like to present another possible theory.

The Gray Squirrel has often been referred to as "the migratory squirrel" because of unusual range-extending movements in the past. According to the Illustrated Encyclopedia of the Animal Kingdom: "When food is scarce, gray squirrels will devour everything edible, then migrate. An extraordinary migration of Gray Squirrels, from Wisconsin to Minnesota, took place in 1905 and necessitated the crossing of the Mississippi River".

The Hunter's Encyclopedia contains the following paragraph about the Gray Squirrel: "During the great squirrel year of 1935, for instance, when several mass migrations were observed (notably the one from New England into New York state), it was also noted that three litters were produced that year instead of the usual two. It is possible that three litters may have occurred in the previous year as well."

The Gray Squirrel extended its range from Minnesota northward along the Red River valley into Manitoba. It ranged westward along the Assiniboine to Portage la Prairie by 1946. In 1958 Nero found that its range was in southeastern Manitoba west to Ninette.

The Gray Squirrel is now found regularly on the eastern slopes of Riding Mountain, occurring north to Dauphin and Gilbert Plains. It has become established near Binscarth, Manitoba, in the Silver Creek Valley, only 15 miles from the Saskatchewan border. Danny Clements reports that he sees it regularly, and that 2 years ago he saw young squirrels as well.

Other Museum specimens of the Gray Squirrel are listed as follows: Male No. 10,842. Donated by F. A. Schmidt, Arcola. Feb. 1970.
Female No. 7080. Donated by G. Markel. Edenwald. March 11, 1959.
Male No. 6752. Donated by E. Bookhammer, Strasbourg. Aug. 31, 1957.

Franklin's Ground Squirrel. R. E. Gehlert

*Somme, Saskatchewan.

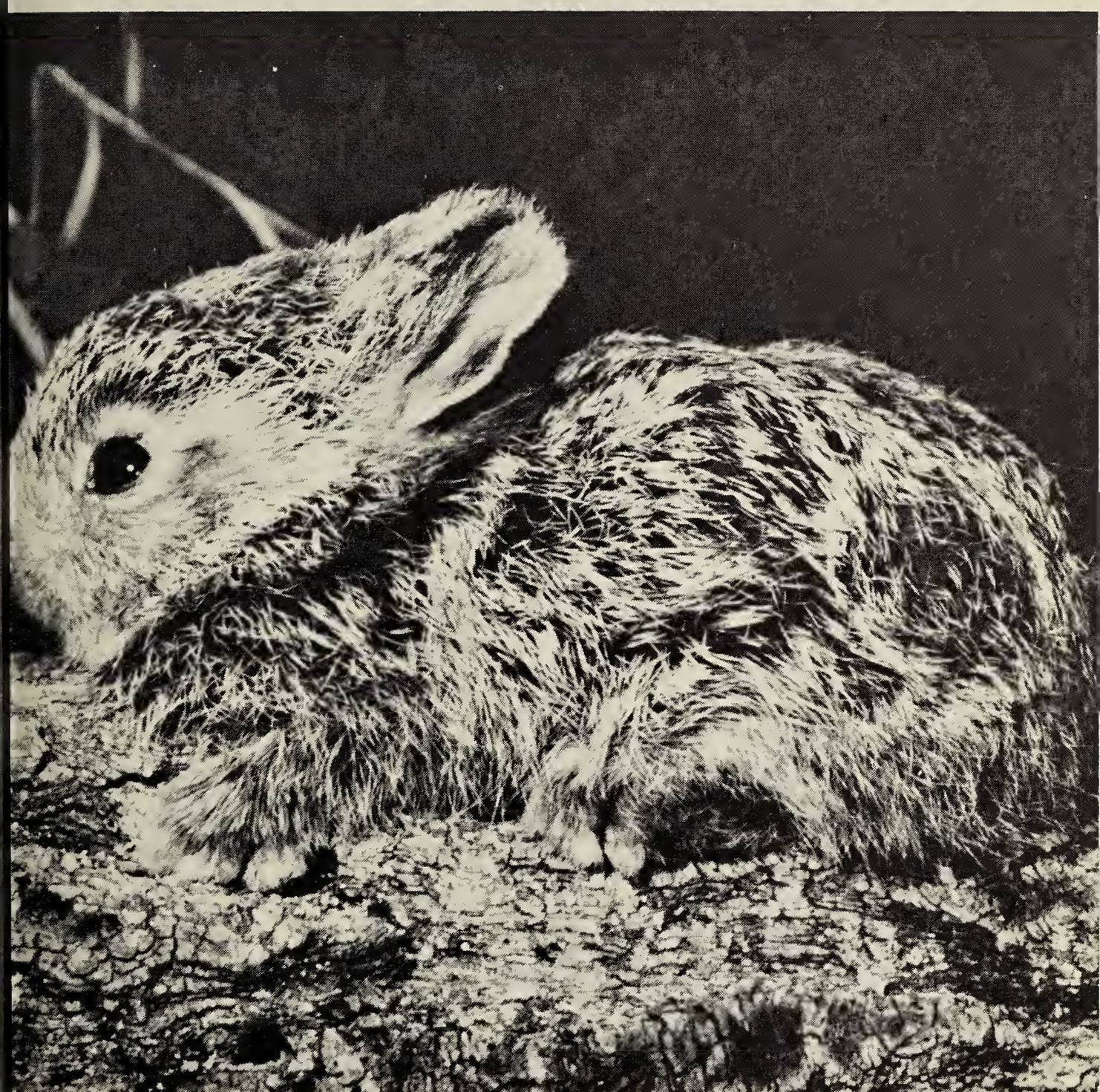
YOUNG MAMMALS

by R. E. GEHLERT

A little fox sleeps.

Hungry chipmunks at 3 weeks of age.

Still hungry at 5 weeks.



A handful of hare.

Titanothere models in the Saskatchewan Museum of Natural History, Regina. Bob Tur

A FOSSIL FIRST FOR CANADA

by RON TILLIE*

In late June, 1973, a report of fossilized bone being uncovered near Eastend, Saskatchewan, was phoned in to the Saskatchewan Museum of Natural History. Thanks to the interest and co-operation of Ken Wills, Bud Hanson and Victor Hicks, all from the Eastend district, we were able to collect the only partial skeleton of a Titanothere found in Canada which still had bones in the proper position.

The specimen was found when dirt from a hillside was being moved to fill a 4-foot water run in a roadside ditch. The maintainer blade scraped the lower edge of one mandible breaking off a portion. Another slice of dirt was to be cut when the operator noticed the broken bone and checked further by hand. The owner of the land and a p son interested in fossil material w contacted and further digging by ha commenced to check its value. Bef long it was evident that this was specimen valuable enough to invol the Museum of Natural History. T museum personnel went to the site July 2. They completed the excavati within 3 weeks and recovered all t was there, approximately 60% of skeleton.

The skeleton was that of Titanothere, a herbivore from Oligocene Era, 35,000,000 years a These early mammals resembled present-day Rhinoceros. They sto approximately 7 feet high at t shoulder. These mammals are believ to have become extinct when the s plants, which their teeth were capa

*Saskatchewan Museum of Natural History, Regina, Saskatchewan.

Quarry where Titanothere was found, northwest of Eastend, Sask. Ron Tillie

of chewing, were replaced by tougher varieties. These new hardier varieties wore the teeth much quicker, thereby, reducing their lifespan drastically and leading to their extinction.

Most of the bones were in excellent structure. They were, however, in very fragile condition and were treated with a shellac-like substance called gelva, as soon as the exposed surfaces were dry. Once the gelva had dried, wet tissue paper was tamped over the exposed bone. Pieces of burlap soaked in plaster were then placed over the specimen and surrounding dirt. Once enveloped by plaster and burlap, they were ready for transportation back to the lab for preparation.

It is hoped that preparation will begin by mid-October, and is expected to last for several months. It will then be decided what type of design will be appropriate to best display this specimen.

It is hoped that assistance from the general public in reporting sites of this nature will be continued. Without their help, much of our earth's history may be lost forever.

Head, jaw and neck vertebrae of Titanothere in natural position. Ron Tillie

COMET KOHOUTEK

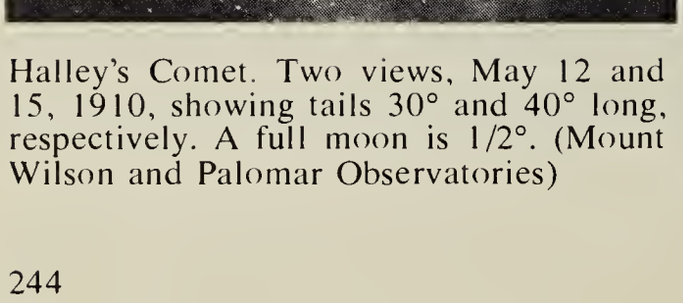
Comet Kohoutek, larger than Halley's Comet, will be visible over the prairie provinces as a hairy or hazy point of light for parts of 4 months beginning November 11, 1973.

No one should use binoculars to view the comet when it is close to the sun. Sun entering binoculars will cause blindness.

Below are the *approximate* sample times that Comet Kohoutek will be visible under clear skies from Saskatoon and Regina. Winnipeg will be about 40 minutes earlier (CST), Calgary and Edmonton also about 40 minutes earlier (MST).

December 4: 6:15 a.m. - 7:00 a.m.
December 14: 7:00 a.m. - 8:00 a.m.
December 24: 8:20 a.m. - 5:00 p.m.
January 3: 10:15 a.m. - 6:10 p.m.
January 13: 5:30 p.m. - 8:00 p.m.
January 23: 7:00 p.m. - 9:10 p.m.
February 2: 7:55 p.m. - 10:00 p.m.
February 22: 8:25 p.m. - 10:50 p.m.

The comet will always be moving east, toward the sun in the morning and away from it in the evening. It will appear to move about the same speed as the sun. (We are indebted to Gordon H. Patterson, Physics Department, University of Saskatchewan, Saskatoon, for the above information and the photo below.)



Halley's Comet. Two views, May 12 and 15, 1910, showing tails 30° and 40° long, respectively. A full moon is 1/2°. (Mount Wilson and Palomar Observatories)

30 Years Ago

Thirty years ago, in the *Blue Jay* editorial for October-December 1943, Mrs. Priestly reported what may have been the first proposal for a provincial national history society in Saskatchewan. She wrote:

> We have also been asked why we do not call our society the Saskatchewan Natural History Society since we have subscribers to the "*Blue Jay*" all across the province. Apart from the fact that this privilege would naturally belong to the Regina N.H.S., which has been active for many more years than we have, it was unanimously decided at our first meeting that our society should be the Yorkton N.H.S. and this is now incorporated in the constitution. What we should like to see, however, is many more local clubs, all of which could then unite to form a federation of Saskatchewan naturalists. Imagine what could be done in the interests of our native wildlife by such an organization! There is no need for a natural history society to be an alarmingly highbrow affair. Our society in Yorkton is a small, friendly group of people who are all interested in the out-of-doors, but we have very definitely learnt the value of being properly organized. For several years, we watched birds and had some pleasant times but, apart from purely personal enjoyment, we "got nowhere" in comparison with what we have done in this past year since we organized as the Y.N.H.S. Now we feel that we are really contributing something of value to the community. Surely there must be sufficient nature lovers in other centres to form similar groups.

It will be remembered that these were the war years. Hence the interest of a description of aircraft bird watching sent to Mrs. Priestly for this same issue of the *Blue Jay* by a young RAF pilot stationed at Swift Current. Pilot Officer Mitchell had been a keen bird student in England, and had already listed 85 Canadian species when he wrote to Mrs. Priestly:

> Birds are rather a menace when flying. When doing low flying here we have to be careful of them, especially

of the Marsh Hawk, which has an awkward habit of rearing up in its normal quartering over the fields when an aircraft approaches. Fortunately none have, so far, hit any aircraft that I have been flying.

. . . once while indulging in some very low flying with an instructor over Rush Lake, we saw a heron which puzzled us. However, by doing a steep turn we found it again and noted its broad ash-grey wings and dark green or black body. Both of us being English knew we had not seen that type of heron before. I imagine it was a Black-crowned Night Heron and, if it was breeding there, the nest would certainly have to be on the ground. That particular trip was fun, for though bird watching at 100 m.p.h. is not easy, we recognized several species we had seen on other occasions, including Blue-winged Teal, Pintail, Bladpate, Red-winged Blackbird, Black Tern, Franklin's Gull and others.

973 CONSERVATION AWARD

The SNHS Conservation Award is presented annually to a person who as made a significant contribution to onservation in the Province of Saskat-hewan." At the 25th Annual Meeting n Saskatoon on October 13, 1973, this ward was given to Mr. Ronald L. Dutcher, Chief Naturalist, Prince Albert National Park. Mr. Dutcher's ajor responsibility is the nature in-rpretive program in the Park. This includes writing brochures, conducting tours and answering questions in all fields of natural history. The popularity of the interpretive programs is truly impressive. The total head count for all activities was 98,088 in 1973, up 25 per cent from the previous year. There were over 6,000 on the conducted nature trails; 9,447 was the attendance at slide presentations, and there were over 9,000 visits to the nature interpretive centre. The new Wolf Country pamphlet had a circulation of 27,000.

Ron Dutcher receives the 1973 Conservation Award from SNHS President Margaret Belcher. G. W. Seib

Blue Jay Bookshop was a busy place.

SNHS ANNUAL MEETING, OCTOBER, 1973.

Photos by GARY SEIB

Honourable Jean Chretien, Guest Speaker.

Lookin at 19,0 swans Goose Lake, Sask. Oct. 14

973 CLIFF SHAW AWARD

The Cliff Shaw Award is given an-ually to an individual who has made significant contribution to natural story through an article in the *Blue y*. At the 1973 Annual Meeting of e Society, a joint award was made to ls. Laura Hoyte and Ms. Thelma epper. Ms. Hoyte wrote about her ex-eriences feeding birds, including a olden Eagle, at Pike Lake, Saskatchewan, in "Feeding the hungry" in the March, 1973 *Blue Jay*. Ms. Pepper described the plantings, the food she uses, and some of the visitors at the feeding station on her city lot in Saskatoon in "Bird watching — indoors" in the same issue. Both authors wrote articles that demonstrate how anyone, whether they live in city or country, can enhance their enjoyment of nature by attracting birds to within a few feet of kitchen or living room windows.

G. W. Seib

ue jay editor, Bernard Gollop, presents the SNHS Cliff Shaw Award to co-winner, elma Pepper. Laura Hoyte could not be present to receive her share of the award.

SASKATCHEWAN NATURAL HISTORY SOCIETY
Financial Statement — Year Ending September 30, 1973

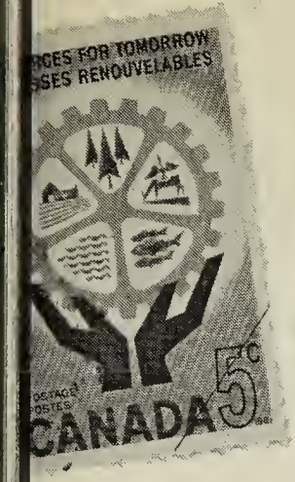
NCOME

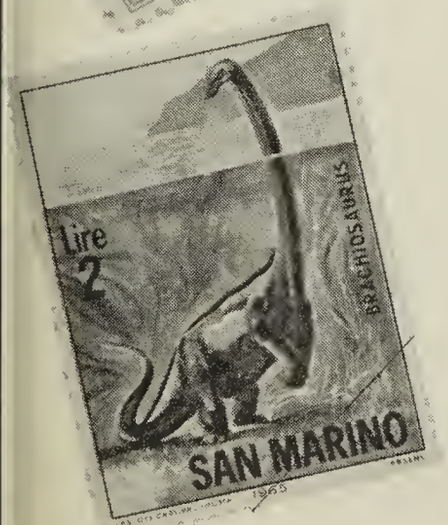
Memberships (including sales of *Blue Jay*)	$ 7,161.64	
Memberships (extra re: supporting and sustaining	2,130.75	$ 9,292.39
Spec. Pub. No. 1 Guide to Sask. Mammals	$ 44.85	
Spec. Pub. No. 2 Birds of Sask. River	5.10	
Spec. Pub. No. 3 Birds of Regina	98.10	
Spec. Pub. No. 4 Blue Jay Index	6.00	
Spec. Pub. No. 5 Birds of Lake Athabasca	52.15	
Spec. Pub. No. 6 Birds of NE Sask.	66.40	
Spec. Pub. No. 7 Birds of Moose Mountain ...	120.89	
Publication — Hours and the Birds	660.30	
Publication — Birds of the Elbow	3.53	1,057.82

Donations: General		136.00	
1973 Summer Meeting (Hudson Bay) (net)		154.20	
Interest (Savings account and bonds)		551.20	
Sales from Blue Jay Bookshop	5,556.42		
Less:			
Cost of sales	4,222.13		
Gross profit (24% of sales)	1,334.29		
Less:			
Postage, advertising, supplies, etc.	421.23		
Honoraria: Brazier $400.00; others $23.55	423.55		
Net profit (8.8% of sales)		489.51	2,388.73
			11,681.12
EXPENSE			
Printing of *Blue Jay* (4 issues)		7,084.66	
Adv. and promotion: Newsletter (4 issues)	1,348.50		
Brochures (5000)	126.00	1,474.50	
1972 Annual Meeting (Regina) (net)		210.22	
Honoraria (Dodd $600.00; others $70.03)		670.03	
Postage		525.77	
Office supplies and stationery		202.16	
Office equipment:			
1/2 (and final) cost of addressograph	542.72		
Cost of plates during year	197.48	740.20	
Bank charges re: U.S. funds		10.43	
Affiliation fees		20.00	
Miscellaneous office and admin. expense		84.68	
Purchase stock Hours and Birds at reduced price		541.74	11,564.3
EXCESS OF INCOME OVER EXPENDITURE			116.7

Statement of Assets and Liabilities as at September 30, 1973

ASSETS			
Cash on hand (Bookshop)			$ 40.00
Cash in bank (chequing) — SNHS		$ 3,766.62	
— Bookshop		730.05	
Cash in bank (savings) — SNHS ($5,615.61, 25.44)		5,641.05	10,137.72
Canada Savings bonds			5,000.00
Stock on hand (Bookshop)			1,083.17
Accounts receivable ($309.26 less prepaid orders $119.06)			190.20
Deposits with Postal Department ($91.97, 150.00)			241.97
			16,693.06
LIABILITIES			
Trust Fund re: Sanctuaries and Conservation Areas			
Balance at September 30, 1972		1,642.20	
Plus donations during past year		3,194.00	
Plus donation in memory of Robert D. Symons		10.00	
		4,846.20	
Big Gully sanctuary — 1973 lease and taxes	440.07		
Donation re: 1973 expenses	290.00	150.07	4,696.1
Marion Nixon Memorial Fund			735.0
Donations in support of special publications			300.0
Midwest Litho Ltd. (estimate re: Sept. *Blue Jay*)			1,850.0
Education Tax			41.0
NET WORTH			
Balance at September 30, 1972		8,954.20	
Plus surplus for year ending September 30, 1973		116.73	9,070.9
			16,693.0





Letters

RAM'S-HEAD LADY'S-SLIPPER AT HUDSON BAY, SASK.

With reference to the *blue jay* of September, 1973 — Ram's-head Lady's-slipper rediscovered in Saskatchewan on page 180:

As you are aware, the summer meeting of the Saskatchewan Natural History Society was hosted by Hudson Bay on June 15 and 16, 1973. The meet itself was a success and the Hudson Bay folk are to be commended for a job well done.

However, since I am very interested in native wild plants of Saskatchewan and have searched for many members of the Orchid family within Saskatchewan, the meet was a high-light, if only for the fact that we located, identified and photographed the Ram's-head Lady's-slipper (*Cypripedium arietinum*). The exact location is quite close to Hudson Bay town site in a stand of Jack Pine on a bed made of sand, pine needles and Labrador Tea to form a mulch.

Two such beds are in existence in that location — possibly 35 plants in one and 50 plants in the other.

Some effort is being made to protect these plants. The Department of Natural Resources personnel at Hudson Bay are aware of their location and we believe that with their usually fine co-operation and the interest shown by the Hudson Bay SNHS members their existence will continue.

C. calceolus var. *parviflorum* and *C. calceolus* var. *pubescens* are now generally lumped together as one — var. *pubescens*. — Vern.

Further, while talking with an acquaintence who is better informed than I, he related to me, how, on a visit

to Uranium City some years ago he admired a bouquet of Showy Lady's-slippers in a friend's home. Upon enquiring as to their origin he was informed that they were found in an area adjacent to Uranium City. It would, therefore, appear that we do have yet another of the Lady's-slippers in Saskatchewan although it has not been reported.* From some information I have, I believe that they also may be present in the northeastern part of Saskatchewan.*

— *Fenton R. Vance*, 208 - 1610 College Ave., Regina, Sask. S4P 1B7.

**Editor's Note:* This could be the Stemless Lady's-slipper (*C. acaule*) which has been reported from Lake Athabasca. If it is yellow, however, it may be another unreported location for the Yellow Lady's-slipper (*C. calceolus*) which does reach into Alaska.

A DISAPPOINTING VISIT TO "BLUE HERON VALLEY"

On June 16, 1972, after leaving the car at a little distance from the hill directly above "Blue Heron Valley", as it is locally called, (southwest of Fife Lake) I proceeded very slowly to within sight of the Blue Heron nests in the valley below me. I was disappointed to see only 5 nests inhabited as 26 were reported in the December, 1970, *Blue Jay* (page 159).

The fledglings appeared to be half-grown and stretched their heads and bodies out of the nests. One adult stood guard, straight and tall like a sentinel on a hill across the valley from me. Some adult birds were flying away from the valley in the direction of Fife Lake and others were flying in the opposite direction towards Poplar Creek. Both these bodies of water are approximately 3 or 4 air miles from the heronry. — *Effie Matson*, Rockglen, Sask.

In addition to renewing your own membership this month, please try to interest a friend in joining.

CHRISTMAS GIFTS THE YEAR ROUND

by MURIEL DICKSON*

The following is a partial list of 3 magazines on natural history and conservation. Most of them are written for the general public. They are listed in alphabetical order. A Christmas subscription will produce from 4 to 3 gifts through the year.

ALBERTA NATURALIST. *Federation of Alberta Naturalists, 2630 - 22nd St., Lethbridge, Alta., 4 issues per year, $2.00.* Well documented articles on Alberta's natural history and current efforts in conservation and environmental education. Regular features include reviews of recent publications and discussions about endangered species. Newsletter format.

AMERICAN BIRDS. *National Audubon Society, 950 Third Ave., New York, N.Y. 10022. 6/yr., $6.25.* Devoted to the birds of North America, this scientific journal includes feature articles and photographs. Special annual issue on the Christmas Bird Count. Coverage of bird observations each season includes our Northern Great Plains region and will be useful for birdwatchers in the prairie provinces.

AUDUBON. *National Audubon Society 1130 Fifth Ave., New York, N.Y. 10028 6/yr., $12.00.* A general magazine originally devoted to the preservation of bird life and now putting equal emphasis on wildlife, plant life and natural resources. Articles are written by authorities in nature literature and are very readable. The excellent colour photography and numerous black and white prints add to the impact of the articles.

BLUE JAY. *Saskatchewan Natural History Society, Box 1321, Regina, Sask. S4P 3B8. 4/yr., $3.00.* A journal of natural history and conservation for Saskatchewan and adjacent regions. Well illustrated in black and white, this magazine is largely written by people who live or have worked in the Prairie Provinces and the Territories.

THE CALGARY FIELD NATURALIST. *The Calgary Field Naturalists' Society, P.O. Box 981, Calgary, Alta. T2P 2K4. 11/yr., $5.00.* This magazine is an informative

*Saskatoon Public Library, 23rd St. and 4th Ave., Saskatoon, Saskatchewan.

combination of news items, reports and specific articles on different aspects of natural history in the area. Primarily of interest to local people but the articles and book reviews will make it useful for all prairie naturalists.

CANADIAN FIELD-NATURALIST. *The Ottawa Field Naturalists' Club, Box 3264, Postal Station C, Ottawa, Ont. K1Y 4J5. 4/yr., $7.00.* Canada's leading scientific journal on natural history and the environment. Articles are prepared by experts and include graphs, charts and photographs. The last yearly issue includes an index to the current volume.

DINNY'S DIGEST. *Calgary Zoological Society, St. George's Island, Calgary 21, Alta. 4/yr., 75c/issue.* A magazine for all animal lovers with excellent black and white prints and drawings. Articles describe new additions to the Calgary Zoo, as well as detailed information on various species of birds and animals.

DISCOVERY. *Vancouver Natural History Society, P.O. Box 3021, Vancouver 3, B.C. 4/yr., $5.00.* With emphasis on British Columbia, *Discovery* includes articles on many aspects of natural history, nature education and ecology. The articles are clear and informative and include some black and white prints and diagrams.

ENVIRONMENT. *Committee for Environmental Information, 438 N. Skinker Blvd., St. Louis, Missouri 63130. 12/yr., $12.00. Environment* is concerned with all aspects of environmental problems, and the articles are written by authorities in the field. Illustrations are black and white. Each issue includes current news items of interest mainly in the United States.

ENRIVONMENT NEWS. *Dept. of the Environment, 705 Milner Bldg., 10040 - 104th St., Edmonton, Alta. T5J 0Z2. 12/yr., free.* An Alberta government publication which reports on current projects and legislation designed to inhibit pollution and control land use for the protection of the environment.

ENVIRONMENTAL EDUCATION. *Pollution Probe, University of Toronto, Toronto, Ont. M5S 1A1. 5/yr., $2.50.* A new magazine, primarily aimed at aiding teachers to develop programmes in environmental studies. Articles range from the philosophy of environmental education to specific activities and studies.

INSECT WORLD DIGEST. *World Digests, Inc., R.R. 1, Box 161, Tallahassee, Florida 32303. 6/yr., $11.00.* A new periodical on entomology which has an attractive format including numerous illustrations and color photographs. Articles deal with specific insects and the environment as it affects them.

INSIGHT. *Box 2194, Vancouver 3, B.C. 6/yr., $4.00.* Formerly *Canadian Conservationist*, this magazine places emphasis on environmental subjects, as well as current social and political affairs relating to conservation problems. The first issue illustrates *Insight's* broad scope with excellent articles on the energy conflict, migration, poverty in Canada, the environmental devastation of Indochina, etc.

THE LIVING WILDERNESS. *The Wilderness Society, 729 - 15th St. N.W., Washington, D.C. 20005. 4/yr., $8.50.* Next to *National Wildlife*, probably the best general American conservation magazine for teenagers and adults. Its concerns include encouraging preservation of wilderness areas and wildlife refuges. Clear maps and photographs appear in abundance.

MANITOBA NATURE. *Natural History Society of Manitoba, Clandeboye, Man. 4/yr., $2.50.* An impressive publication on the natural history of Manitoba, this magazine will be of interest to both students and adults. The articles are well written and colourfully illustrated, and cover botany, zoology, archaeology and geology.

NATIONAL PARKS AND CONSERVATION. *National Parks Assn., 1701 - 18th St. N.W., Washington, D.C. 20009. 12/yr., $10.00.* The National Parks Association's primary aim is to preserve the national parks of America but this magazine also includes protection of the natural environment in general. Beautifully illustrated. Contains editorial comment on national conservation issues in the United States.

NATIONAL WILDLIFE and INTERNATIONAL WILDLIFE. *National Wildlife Federation Inc., 1412 - 16th St. N.W., Washington, D.C. 20036. 6/yr., $7.50 each. National Wildlife* is one of the best known general magazines on the preservation of the environment, emphasizing how mankind and the animal world depend on the earth's resources. *International Wildlife* has the same format but offers worldwide coverage. Both magazines are beautifully illustrated with colour and black and white photographs.

NATURAL HISTORY. *American Museum of Natural History, 79th St. and Central Park W., New York, N.Y. 10024. 12/yr., $9.00.* This magazine has a popular approach to several fields including conservation, botany, anthropology, geography and all kinds of wildlife. The articles are authoritatively written and the text is complemented by excellent colour and black and white photographs.

NATURE CANADA. *Canadian Nature Federation, 46 Elgin St., Ottawa, Ont. K1P 5K6. 4/yr., $5.00.* One of the best general Canadian natural history magazines, *Nature Canada* features articles on preservation of all types of wildlife, natural resources and Canadian environmental concerns. The photography, both colour and black and white, is outstanding and makes the material suitable for the junior high-adult level. Each issue includes continuing news item coverage on federal, provincial and international environmental concerns, as well as an excellent section of book reviews. In the last four issues there have been seven major articles specifically about the prairies and six others with references to the prairie provinces as well as to other parts of Canada.

OUTDOOR CANADA. *181 Eglinton St. E., Suite 300, Toronto, Ont. M4P 1J9. 6/yr., $2.75.* A nature magazine with well-written articles on people, places, sports and hobbies. There are a few articles on the "joys of hunting" but the overall high calibre of the articles and photography, both colour and black and white, makes *Outdoor Canada* worth a subscription.

PARK NEWS. *National and Provincial Parks Assn. of Canada, 43 Victoria St., Toronto, Ont. M5C 2A2. 4/yr., $10.00.* This magazine contains articles, news and reports on Canadian parks. The emphasis is on preservation of natural and historic sites and research into various areas. Excellent black and white prints and detailed maps accompany the articles.

PARKS AND RECREATION. *National Recreation and Park Assn., 1601 North Kent St., Arlington, Virginia 22209. 12/yr., $10.00.* Concerned with providing information on all phases of the park, recreation and conservation movements. Good colour photography and illustration.

THE PRAIRIE NATURALIST. *North Dakota Natural Science Society, P.O. Box 1672, Jamestown, North Dakota 58401. 4/yr., $3.00.* The articles in this publication range from environmental concerns to specific, detailed articles on plants and animals. The emphasis is on the North Dakota area but due to the similarity in regions many of the items will be of interest to Canadian prairie naturalists.

PROBE. *P.O. Box 1372, Saskatoon, Sask. 12/yr., $3.00.* The joint newsmagazine of Regina Pollution Probe and the Saskatoon Environmental Society, *Probe's* primary aim is to provide a forum for communication among "environmentally-aware people" in Saskatchewan. Environmental protection and problems are discussed including legislation, the energy crisis and pollution. Reports on specific studies, such as the Churchill River Study, are informative additions.

RANGER RICK'S NATURE MAGAZINE, *National Wildlife Federation 1412 - 16th St. N.W., Washington, D.C. 20036. 10/yr., $7.00.* The children's version of *National Wildlife*, designed to give a programme of activities, adventures, and knowledge which will help them appreciate and enjoy nature. Excellent colour photography. A good choice for elementary school children.

SASKATCHEWAN ARCHAEOLOGY. *Saskatchewan Archaeological Society, Museum of Natural History, Regina, Sask. Occasional, $3.00.* A newsletter promoting the preservation of the archaeological sites and artifacts of Saskatchewan. Detailed descriptions and photographs of archaeological discoveries as well as book reviews are included.

THE YOUNG NATURALIST. *Federation of Ontario Naturalists, 1262 Don Mills Rd., Don Mills, Ont. M3B 2W7. 10/yr., $3.00.* A publication primarily geared to elementary school children and teachers. The articles cover birds, plants, insects and other animals. They include colour photographs as well as drawings. Nature projects and ideas for teachers are useful additions.

The following periodicals often contain articles on natural history although it is not their main priority.

THE BEAVER. *Hudson's Bay House, 77 Main St., Winnipeg, Man. R3C 2R1. 4/yr. $3.00.* A consistently excellent periodical including articles on areas of past and present affiliation with the Hudson's Bay Company. The information may be historical or contemporary and is lavishly illustrated with colourful photographs and paintings.

NATIONAL GEOGRAPHIC. *National Geographic Society. 17th and M Sts., N.W. Washington, D.C. 20036. 12/yr., $8.65.* An excellent magazine, suitable for all ages from junior high on. The articles are colourful, clearly written, and cover topics like geography, people and customs, animal and plant life, and scientific discoveries. The National Geographic Society also publishes the NATIONAL GEOGRAPHIC SCHOOL BULLETIN, a weekly pocket sized version of the parent magazine designed for children, age 8 through 14. *30/yr., $3.50.*

THE COMMON INSECTS OF NORTH AMERICA

By Lester A. Swan and Charles Papp. Harper and Row Publishers, Inc., 10 East 53rd Street, New York, N.Y. 750 pp., 1972. $15.00 (U.S.)

This book is meant to provide any interested person with a much needed, easy way to identify the common insects of North America north of Mexico. Text and description are minimized and emphasis is placed on black and white pictures and sketches for identification of the orders and species. The book is intended for the layman without formal courses in entomology as well as for the general biologist and specialist. To ensure that the readers may better understand the book's context brief general discussions of biology and classification (supplemented with drawings) preface the main part of the text.

Some 1,400 major species of insects in 23 main orders are illustrated and discussed. Discussions include information on distribution, food plants and types of injury, animal hosts, insect growth and size, time of occurrence, etc.

A bibliography of some 370 titles is included of which about 30 are Canadian. To evaluate in part the degree to which Canadian species of insects may have been overlooked, the list of species occurring in the 1971 Annual Report for the Forest Insect and Disease Survey, Canadian Forestry Service, was checked against the index of species included in this book. Of approximately 115 recorded in the Survey report, only some 50 species are included in this book.

Despite its shortcomings, this publication is a real contribution to entomology by bringing together a great deal of information on insects, hitherto found largely in separate leaflets, journals, etc., and available mainly to specialists. It will not provide answers to all questions and problems of insect identification encountered by laymen, general biologists or specialists but it will go far towards meeting many of their needs both in the U.S.A. and Canada. The fact that identification is brought to the species level makes this publication better than other publications which fail to do so. It should prove practical and valuable as a reference source on insects for the high school library. — *Lloyd O. T. Peterson*, Indian Head, Sask.

THE SNIPES: A STUDY OF THE GENUS CAPELLA

By Leslie M. Tuck. Canadian Wildlife Service Monograph Series, No. 5. 429 p. Information Canada, Ottawa. 1972. $7.50.

I heard that sound again this morning — a sure sign that it is May. A sound that is felt as much as heard; a sound that shares spirit-like origins with the call of the Loon; a sound whose production puzzled scientists for over 100 years; the sound of "winnowing" or "bleating" of the Wilson's Snipe.

The production of this sound and all aspects of behaviour, systematics, morphology, ecology and management of this genus are methodically covered in this book. The text is well documented and illustrated. Dr. Tuck writes in a style that is most readable and which is equally appealing to the amateur and professional ornithologist. It is this ability to combine original, significant information with a very readable style that has won him the Wildlife Society's Terrestrial Publications Award in 1962 for his book *The Murres*, and again in 1973 for *The Snipes*. One can not find fault with content or format.

It is worthwhile to consider that both of Tuck's monographs and Erskine's *Buffleheads* are the products of long-term field investigations. Such long-term research is the only way in which such an accumulation of knowledge can be obtained. One wonders if the recent trend in government policy towards short-term research will bring an end to the Monograph Series. As a reader, a biologist and a concerned citizen I sincerely hope not. — *Glen A. Fox*, Edmonton, Alberta.

ALBERTA VIREOS AND WOOD WARBLERS

Families Vireonidae and Parulidae. Distribution and Breeding.

By W. R. Salt.
Provincial Museum and Archives of Alberta, 12845 - 102nd Ave., Edmonton, Alberta. 141 p. $4.50.

This is the third book in the Alberta Provincial Museum and Archives' publication series. The author is an Honourary Member of the Federation of Alberta Naturalists and is best known as the co-author of *Birds of Alberta*.

Using a vast amount of data too detailed for inclusion in *Birds of Alberta*, Dr. Salt provides a thorough description of the distribution, migration and nesting of the 4 vireos and 30 wood warblers occurring in Alberta.

Under "Distribution" and "Subspecies" there is a general description of the range and abundance of each species, and a brief description of the range of each subspecies. This is followed by a long list of localities giving local abundance in certain localities throughout the province and a full page map of the breeding range of each subspecies in the province.

Under the heading of "Nesting", there is a well-written description of the nest itself, its site, the general habitat preferred for nesting as well as a discussion of the habits of the bird near the nest. There follows a documented list of locations and dates for nests in Alberta.

In the section on migration early dates of arrival and late dates of fall departure are given for several localities throughout Alberta. Information on hybridization and parisitism is included for a few species. There is also a list of 120 references.

Unfortunately, for a book on warblers and vireos, no attention is paid in the text to their identification. The book does include a series of paintings of fall plumages but these are, in the opinion of the reviewer, too pale. This may be due to faded museum specimens used, to poor reproductio or to the original paintings. Also th fact that only one individual of each the 34 species is shown makes it little help in identification since ther is such a wide variation in colour fall warblers of a particular species.

For Alberta birdwatchers, th volume will be useful as a guide when and where they may find ea species. For all birdwatchers, th section on nesting should be of valu in helping them find nests of the wa blers and vireos covered. — *St Shadick*, Saskatoon, Sask.

A SIMULATION MODEL FOR TH MANAGEMENT OF SANDHILL CRANES

By Richard S. Miller, George S. Hoc baum and Daniel B. Botkin.
Bull. No. 80 School of Forestry and E vironmental Studies, Yale University. Ne Haven, Connecticut. 49 p. 1972. $2.50.

Miller et al. combine a critic review of Sandhill Crane manageme with their presentation of a simulati model designed to demonstrate the e fects that change in demographic fa tors can have upon the populati dynamics of cranes. The stated pu pose of their study was "to suggest t kinds of data required for prop management of the species . . ." and "help focus our thinking and point o the crucial gaps in our knowled about the population dynamics Sandhill Cranes . . ." In reality t authors have interwoven theoretic considerations with practic criticisms of current cra management to such an extent that must conclude that criticism management appears to have been primary objective.

Their main concern hinges up their apparent belief that in the face recreational hunting pressure, Sandh Cranes "could enter into a long-ter decline in population size before t evidence of such a decline was dete ted, and that the species might beco endangered before it was returned protected status." They have evident

Sandhill Cranes in flight. Fred Lahrman

rrived at this conclusion through a ubjective evaluation of current crane urveys and highly theoretical projec- ions of the dynamics of a crane opulation exposed to different levels f simulated hunting. The conclusion s drawn despite their own qualifying tatement that "These projections are ade merely to illustrate a variety of ossible hunting situations and to show imitations of the existing data; it hould be clear that the projections hould not be taken literally."

The average number of cranes coun- ed during preseason surveys in New Mexico and Texas over an 11-year eriod is about 195,000 cranes with he lowest being 135,000 in the first ear of the survey. The total number of ranes is estimated at 300,000 on the asis of these and other surveys. Miller t al. interpret the variable nature of he survey to mean that a decline in rane numbers would not be detected ntil the population fell below 35,000 and that, by the time it was etected, the population could already e in serious trouble. This seems to me o be a misinterpretation of the apabilities of the annual survey. The urvey has so far dealt with an ap- arently stable crane population and as yielded average counts of about 65 ercent of the estimated population. It is illogical to assume that if the population declined the accuracy of the survey would increase concurrently to produce results similar to previous years and that managers would therefore not suspect a decline until the population actually fell below 135,000 or about 45 percent of its currently estimated level.

Miller et al. have succeeded in pointing out the need for accurate measurements of demographic parameters of Sandhill Cranes but in my opinion their criticisms of current management are too easily discredited.

For a scholarly publication, this one has an incredible number of editorial shortcomings such as no pagination in the Table of Contents; all figures without numbers or legends in the text; no references cited for important population data and at least three references cited in the text but omitted from the Literature Cited. — *A. Brian Ransom,* Boissevain, Manitoba.

Editor's Note: Life history data as given in this bulletin is as follows: Sandhill Cranes probably begin to breed in their 4th year and live 20 to 25 years. Two eggs is the most frequent number in a nest but usually only one young survives to migrate south. On the average, about 30 young are produced per 100 adults. There are apparently no data on mortality rates for this species in the wild.

LOOKING BACK

At Year I

Now that Volume 31 has been produced, it may be interesting to look back on the last 256 pages of *blue jay* from a people point of view.

First of all, there were about 100 contributors of articles, notes, letters, etc. Without the immense number of man-hours that they put into approximately 120 published items, there would have been no *blue jay*. As it was, those who read most of the items submitted for accuracy, clarity and the possibility of adding pertinent information had their hands full — Vern Harms, Merv Atton and, particularly, Bob Nero who had the heaviest load because he reviewed the bird and mammal articles. Mark Abley and Ed Driver have also helped in reading manuscripts.

After review, the material goes to the printers, Midwest Litho, Saskatoon, and here Charlie Martin and Harold Mitchelmore have made many good suggestions and shown great patience. After the preliminary printing (proofs or galleys), our proofreaders take over — Molly Denson, Bill Richards, Muriel Galloway and Jean Meston. They check galleys against manuscripts which by now may have been somewhat modified. At this point, it should be emphasized to authors who have found changes or errors in their published submissions that the fault is the editor's, not of anyone named above. Changes may be suggested, particularly in an attempt to shorten an article or to adjust it to *blue jay* style, but the changes are not made unless the editor agrees to them. He also approves all corrected galleys.

Corrections required in galleys are usually minor and so, at the same time that one set goes to the proofreaders, a second set is sent to Gary Seib in Regina to cut and paste into a dummy *blue jay*. Gary puts order into the long lines of printed columns and gets them to fit into 5-1/2 x 8-1/2 inch pages — on short notice. He also determines the size of illustrations and the cropping needed for them. Between issues, he spends considerable time with generous photographers, such as Fred Lahrman and Bob Gehlert, rounding up appropriate illustrations for articles coming in. Up to half the photos in an issue have been from sources other than authors.

The mock-up comes back to the editor and it, with corrected galleys, then goes to the printers for production of a stapled journal. Once again, the issue is sent to Regina, where Lorne Scott, George Dodd, junior naturalists from Indian Head, Gary Seib and others spend about 8 hours getting each issue ready for the post office. Hopefully, it is in readers' hands within a week. The number of people receiving the *blue jay* is, in large part, a credit to the efforts of Lloyd Peterson and those who have cooperated with him in obtaining memberships.

Other members have also contributed their time: Sandie Shaver and Jean Meston have typed anything that needed to be done. Sandie and Pern Corder have also written to some past contributors and encouraged them to write again. Jim Wedgwood has given the editor leads to enough articles and authors to fill an entire year of *blue jays*. Stuart Houston has been active in this and other ways. Margaret Belcher has selected material for "30 Years Ago" for each issue and Andre Bouthillette tabulated the results of the questionnaire. Others have helped in small but necessary ways.

To all of these people, I express my thanks. To authors, I also extend my apologies for mistakes I may have made. I am particularly appreciative of the efforts of the editorial staff during this, my first year of editorial training. Without their help, there would not have been four *blue jays* in 1973. — J. B. Gollop.

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